

INFORMATION ONLY

SPECIAL PROVISIONS

**ROUTE U. S. 46 (1953) SECTION (46)
FROM THE VICINITY OF PECKMAN RIVER TO WEST OF LOWER NOTCH ROAD
CONTRACT NO. 058960386
GRADING, DRAINAGE, PAVING AND STRUCTURES
TOWNSHIP OF LITTLE FALLS, BOROUGH OF WEST PATERSON
PASSAIC COUNTY**

FEDERAL PROJECT NO. NH-0054 (190)

AUTHORIZATION OF CONTRACT

The Contract for this Project is authorized by the provisions of Title 27 of the Revised Statutes of New Jersey and supplements thereto, and Title 23 of the United States Code - Highways.

SPECIFICATIONS TO BE USED

The 2001 Metric Standard Specifications for Road and Bridge Construction, of the New Jersey Department of Transportation as amended herein will govern the construction of this Project and the execution of the Contract.

These Special Provisions consist of the following:

Pages 1 to 99 inclusive for General, Road, and Bridge Provisions.

Required Contract Provisions, Federal-Aid Construction Contracts (Form FHWA-1273) pages 1 to 10 inclusive, revised April 1993.

Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246), pages 1 to 5 inclusive, dated December 1980, revised April 1984.

Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246), pages 1 and 2, dated December 1980, revised April 1984.

State of New Jersey Equal Employment Opportunity for Contracts Funded by FHWA, page 1, dated November 1978, revised April 1984.

Disadvantaged Business Enterprise Utilization Attachment, FHWA Funded Contracts, pages 1 to 7 inclusive, dated September 1987, revised January 1989, September 1992, and May 1995.

Incentive Program, Disadvantaged Business Enterprise Utilization Attachment for FHWA Funded Contracts, pages 1 and 2, dated April 6, 1993.

Equal Employment Opportunity Special Provisions, pages 1 to 11 inclusive, dated February 1976, revised April 1984, November 22, 1988, and March 1998.

Special Contract Provisions for Investigating, Reporting, and Resolving Employment Discrimination and Sexual Harassment Complaints, pages 1 and 2 inclusive, dated January 1989.

General wage determinations issued under Davis-Bacon and related acts, published by US Department of Labor, may be obtained from the Davis-Bacon web site at <http://www.access.gpo.gov/davisbacon/nj.html> under the appropriate county, select the construction type heading: HIGHWAY.

Environmental Hazard Abatement Pages 1 through 28, Dated August 2003.

The Contractor shall pay the minimum wage rates determined by the United States Secretary of Labor and the New Jersey Department of Labor. If the minimum wage rate prescribed for any craft by the United States Secretary of Labor is not the same as the minimum wage rate prescribed for that craft by the New Jersey Department of Labor, the higher rate shall be the rate paid.

State wage rates may be obtained from the New Jersey Department of Labor (Telephone: 609-292-2259). The State wage rates in effect at the time of award will be made a part of this Contract, pursuant to Chapter 150, Laws of 1963 (NJSA 34:11-56.25, *et seq.*).

In the event it is found that any employee of the Contractor or any subcontractor covered by the Contract, has been paid a rate of wages less than the minimum wage required to be paid by the Contract, the State may terminate the

Contractor's or subcontractor's right to proceed with the Work, or such part of the Work, as to which there has been a failure to pay required wages and to prosecute the Work to completion or otherwise. The Contractor and its sureties shall be liable to the State for any excess costs occasioned thereby.

DIVISION 100 - GENERAL PROVISIONS

SECTION 101 - GENERAL INFORMATION

101.01 General.

THE FOLLOWING IS ADDED:

Pursuant to NJSA 27:1B-21.6, the Commissioner intends to enter into a multi-year contract for the advancement of the Project. Although the multi-year contract will pledge funds anticipated to be appropriated for the Project by the Legislature, payment of the moneys pledged is subject to the availability of funds in the fiscal year (FY) in which the funds are to be appropriated. Only amounts appropriated by law may be expended.

The Commissioner intends to proceed expeditiously with the Project. However, there is no assurance that the Annual Appropriations Act will contain an appropriation or that the Federal Government will approve or provide federal funding for the Project. The Legislature has no legal obligation to make such an appropriation. Failure by the Legislature to appropriate funds or failure by the Federal Government to approve or provide federal funding sufficient to advance the Project will not constitute a default under, or breach of, any contract entered into by the State for the construction of the Project. However, if the State terminates the Contract or suspends work under the Contract because the Legislature has failed to appropriate or the Federal Government has failed to provide or approve sufficient funding to advance the Project, the parties to the Contract will retain their rights pursuant to the suspension of work and termination of Contract Provisions of the Project specifications; except as indicated below.

The Contractor shall not expend or cause to be expended any sum in excess of the amount allocated in the current fiscal year's Capital Program (as specified below). The Department will notify the Contractor when each level of additional funding has been appropriated by the Legislature or approved or provided by the Federal Government. Any expenditure by the contractor which exceeds the amount actually appropriated or exceeds the amount of approved federal funding is at the Contractor's risk and the Contractor waives any right to recover any sum in excess of that appropriated amount or the amount approved or provided by the Federal Government even if the State terminates or suspends work under the Contract because the Legislature has failed to appropriate or the Federal Government has not provided or approved sufficient funds to advance the Project.

The approved 2004 Capital Program has an item with \$ 3 million for the construction of the Project.

It is further anticipated that the balance of the funds necessary to complete the Project will be provided after March 15, 2004.

It should be noted that the Federal FY begins October 1 of the previous calendar year and that the State FY begins July 1 of the previous calendar year.

101.03 Terms.

THE THIRD ITEM LISTED UNDER THE TERM "COMPLETION" IS CHANGED TO:

3. the Contractor has satisfactorily executed and delivered to the Engineer all documents, which is to include the federal form FHWA-47 "Contractor's Statement of Materials and Labor" according to 23CFR 635, for Federal Funded Projects, certifications, and proofs of compliance required by the Contract Documents, it being understood that the satisfactory execution and delivery of said documents, certificates, and proofs of compliance is a requirement of the Contract.

THE TERM "EXTREME WEATHER CONDITIONS" IS CHANGED TO:

EXTREME WEATHER CONDITIONS. When, solely as a result of adverse weather, the Contractor is not able to work, the Contractor is entitled to claim that progress of the Work has been affected by extreme weather conditions and may seek an extension of Contract Time consistent with the provisions of Subsection 108.11.

THE FOLLOWING IS ADDED:

PARCEL. Property to be acquired for transportation purposes, described by metes and bounds.

101.04 Inquiries Regarding the Project.

Inquiries regarding the various types of work of this Contract shall be directed to the following representatives of the Department having offices at P.O. Box 600, Trenton, New Jersey 08625, or such other individuals as may hereafter be designated:

1. **Before Award of the Contract.** All inquiries shall be directed to the Bureau of Quality Assurance at P.O. Box 600, Trenton, New Jersey 08625.
Telephone: 609-530-2377 (John Varrelmann)
Fax: 609-530-3853

All inquiries shall include the following:

- a. Name of the company;
- b. Telephone number, fax number, and contact person; and
- c. Specifics of the inquiry, including anticipated impacts.

The Department will investigate the information provided in the inquiry and then respond through an addendum only if determined to be necessary.

2. **After Award of the Contract.** All inquiries shall be directed to the Resident Engineer through the following Regional Construction Office:

North
Mr. George Schiele, Regional Construction Engineer
200 Stierli Court
Mt. Arlington, NJ 07856-1322
Telephone: 973-770-5025

SECTION 102 - BIDDING REQUIREMENTS AND CONDITIONS

102.06 Examination of Contract Documents and Site of Project.

6. **Existing Structures.**
THE FIRST SENTENCE IS CHANGED TO:

A list of existing structures within the Project is provided on the Plans.

SECTION 104 - SCOPE OF WORK

104.01 Intent.

THE FOLLOWING IS ADDED:

The work consists of construction of a new Route 46 Bridge over Browertown Road, new access ramps connecting Route 46 westbound to Browertown Road, a new road, Rose Street to the south of Route 46, and new access ramps connecting Route 46 eastbound to Rose Street. Work also includes removal of the existing culvert and construction of a new precast concrete culvert under Route 46 at Great Notch Brook, new culverts under Browertown Road, Rose Street, and Ramp B at Great Notch Brook, Proprietary-Type Retaining Walls at various locations, and overhead and cantilever sign structures. Work also includes demolition and removal of the existing bridge and culverts in stages per contract plans.

Bridge and Roadway work is to be performed under staged construction. Temporary girders and support system to support the existing bridge deck will be required during stage construction.

SECTION 105 - CONTROL OF WORK

105.04 Working Drawings.

THE FOLLOWING IS ADDED AFTER ITEM 21 IN THE 17TH PARAGRAPH:

22. Temporary Girders and Support System

23. Temporary Shielding

105.09 Cooperation with Utilities.

THE FOLLOWING IS ADDED AFTER THE FIRST PARAGRAPH:

The corporations, companies, agencies, or municipalities owning or controlling the utilities, and the name, title, address, and telephone number of their local representative are as listed below:

Electric

Public Service Electric & Gas Company - Electric
150 Circle Avenue
Clifton, NJ 07011
Mr. Rod Dickens
Division Manager, Metropolitan Division
Telephone: (973) 365-2800 Fax: (973) 546-6675
Mr. Robert Kinney
Telephone: (973) 365-2847

Gas

Public Service Electric & Gas Company - Gas
150 Circle Avenue
Clifton, NJ 07011
Mr. J. Thomas Frey, Area Distribution Manager
Asset Manager-North
Telephone: (973) 430-8807 Fax: (973) 642-7284
Mr. William Elmer
Supervising Engineer-Asset Management
Telephone: (973) 365-6915

Telephone

Verizon New Jersey, Inc.
900 Clinton Avenue, 2nd Floor
Irvington, NJ 07111
Mr. Bruce Stanley
Manager, Central Engineering Services
Telephone: (973) 649-3007
Mr. Glenn Howell
Telephone: (973) 631-7551 Fax: (973) 285-5046

Cable

Cablevision of Oakland
40 Potash Road
Oakland, NJ 07436
Mr. Daniel Gannon
Telephone: (973) 337-1550 ext. 221

Water

New Jersey American Water Company
Mr. William H. Pearce
Vice-President – Engineering
500 Grove Street
Haddon Heights, NJ 08035
Telephone: (856) 547-1700, (856) 672-2706 (Direct)

New Jersey American Water Company
167 J.F. Kennedy Parkway
Short Hills, NJ 07078-2795
Mr. Kenneth P. Taylor
Telephone: (973) 564-5713

Sanitary Sewer

Township of Little Falls
35 Stevens Avenue
Little Falls, NJ 07424
Honorable Mayor Gene Kulick
Telephone: (973) 256-0170

Township of Little Falls
c/o Paul Schilling & Sons
194 Warburton Avenue
Hawthorne, NJ 07506
Mr. Robert P. Schilling, P.E.
Township Consulting Engineer
Telephone: (973) 427-1063

Borough of West Paterson
5 Brophy Lane
West Paterson, NJ 07424
Honorable Mayor Garry Colletti
Telephone: (973) 345-8100

Borough of West Paterson
Department of Public Works
One Browertown Road
West Paterson, NJ 07424
Mr. George Galbraith
Director of Public Works C.P.W.M.
Telephone: (973) 256-1264

Fire Alarm

Borough of West Paterson
Department of Public Works
One Browertown Road
West Paterson, NJ 07424
Mr. George Galbraith C.P.W.M.
Director of Public Works
Telephone: (973) 256-1264

Water Transmission Mains

Passaic Valley Water Commission
1525 Main Avenue, P.O. Box 230
Clifton, NJ 07011
Mr. James Duprey, Director of Engineering
Telephone: (973) 340-4300 Fax: (973) 772-4148
Mr. Kevin Byrne
Telephone: (973) 340-4323

City of Newark
Department of Water and Sewer Utilities

Division of Sewers and Water Supply
1294 McBride Avenue
Little Falls, NJ 07424
Mr. Anthony DeBarros
Manager, Department of Water and Sewer Facilities
Mr. John Tarasuk
Land Surveyor/Principal Planner
Telephone: (973) 256-4965

Bidders are advised to verify the above information as its accuracy and completeness is not guaranteed by the Department.

The Contractor is advised that the design for this Contract did not identify any anticipated utility conflicts. However, this Contract does require the Contractor to perform underground excavation and/or the driving of guide rail posts and is reminded to call the State's One Call System as specified in the Standard Specification's, as noted in the first paragraph of Subsection 105.09, to verify that a conflict does not exist.

UTILITY WORK AND TIME FRAMES

Utility General Notes.

1. State's Resident Engineer shall provide the Company with notices.
2. Prior to installation of Company facilities the State and Company shall jointly verify the location.
3. Company schedules contained herein are estimated time frames for each individual Company and do not include work performed by utility companies sharing joint facilities.
4. Company schedules are estimated and may change in accordance with field conditions.
5. Revisions to the staging of construction may alter these schedules.
6. Where joint facilities are proposed each Company shall coordinate its work with the effected companies.
7. Time frames for performing Company work are accumulative and not consecutive for Companies sharing joint poles. Each Company shall commence work when the poles are available for each of the individuals Company facilities.
8. All distances, stations, offsets, and lengths are approximate (plus or minus).
9. Existing facilities can only be removed after relocated facilities have been installed and are in operation.
10. Work performed by the Contractor is included in the State's Construction Plans and Specifications where appropriate.

Public Service Electric & Gas Company - Electric Facilities

Existing Facilities:

Aerial Primary and Secondary

Work to be Performed by PSE&G

1. Unidentified pole (Rt. 46 Sta. 93+601, 20.6m Rt.) to pole PS2564LF (Rt. 46 Sta. 94+323.6, 20m Rt.). Move poles behind proposed curb. Use 70' poles to span over sign structures no.1 and no.2, and Great Notch Brook Culvert. At fill areas, poles shall be relocated after roadway embankment is constructed. Temporarily De-Energize and back feed 4 KV and 13 KV distribution circuit adjacent to Great Notch Brook Culvert, to avoid culvert construction.

Schedule: PSE&G's required Notification Time is 130 Working days. PSE&G requires 80 Working days to complete their work.

Notes: All materials and labor for aerial construction to be provided by PSE&G. All materials and labor for underground construction to be provided by PSE&G.

2. Pole PS2564LF (Rt. 46 Sta. 94+323.6, 20m Rt.) to pole PS2660LF (Rt. 46 Sta. 94+851.2, 20.2m Rt.). Move poles behind proposed curb. Do this work after initial grading. Temporarily relocate aerial service adjacent to bridge. Remove aerial service and poles which provide highway lighting for the existing eastbound Ramps.

Schedule: PSE&G's required Notification Time is 130 working days. PSE&G requires 55 working days to complete their work.

Notes: All materials and labor for aerial construction to be provided by PSE&G. All materials and labor for underground construction to be provided by PSE&G.

3. Pole 62129LF (Rt. 46 Sta. 94+209.6, 20.4m Lt.) to pole PS2374LF (Rt. 46 Sta. 94+408, 20.8m Lt.). Move poles behind proposed curb. Use 70' poles to span Great Notch Brook culvert. At fill areas, poles shall be relocated after roadway embankment is constructed. Temporarily De-Energize and back feed 4 KV and 13 KV distribution circuit adjacent to Great Notch Brook culvert, to avoid culvert construction.

Schedule: PSE&G's required Notification Time is 130 working days. PSE&G requires 35 working days to complete their work.

Notes: all materials and labor for aerial construction to be provided by PSE&G. All materials and labor for underground construction to be provided by PSE&G.

4. Pole A62187LF (Rt. 46 Sta. 94+473.0, 21.8m Lt.) to unidentified pole (Ramp D Sta. 1+060, 30.6m Rt.). Remove pole A62187LF (Rt. 46 Sta. 94+473, 21.6m Lt.) Install new temporary pole at Ramp D Sta. 1+071, 11m Lt. to replace PS2373. Temporarily transfer existing aerial service to between poles B62182LF to pole PS2374LF to avoid bridge construction. After the bridge is constructed, install permanent aerial cables between poles B62182LF and PS2374LF. Poles should be high enough to avoid sign structure No. 3.

Schedule: PSE&G's required Notification Time is 130 working days. PSE&G requires 15 working days to complete their work.

Notes: All materials and labor for aerial construction to be provided by PSE&G. All materials and labor for underground construction to be provided by PSE&G.

5. Pole B62182LF (Rt.46 Sta. 94+546, 20m Lt.) to pole PS2740LF (Rt. 46 Sta. 94+936.5, 20m Lt.). Move poles behind proposed curb. Use 70' poles to span over sign structure No.5. At fill areas, poles shall be relocated after roadway embankment is constructed.

Schedule: PSE&G'S required notification time is 130 working days. PSE&G requires 60 working days to complete their work.

Notes: all materials and labor for aerial construction to be provided by PSE&G. All materials and labor for underground construction to be provided by PSE&G.

6. Pole 60507LF (Browertown Rd. Sta. 9+746, 4.5m Rt.) to pole 60445WP (Browertown Rd. Sta. 10+405, 4.5m Lt.). Move poles behind proposed curb. At fill areas, poles shall be relocated after roadway embankment is constructed. Temporarily relocate aerial service adjacent to bridge. De-Energize and Backfeed.

Schedule: PSE&G's required Notification Time is 130 working days. PSE&G requires 110 working days to complete their work.

Notes: All materials and Labor for aerial Construction to be provided by PSE&G. All materials and labor for underground construction to be provided by PSE&G.

7. Pole 61326 (Ramp C Sta. 1+130, 45m, Right) to Pole 3180 (Ramp C Sta.1+165, 70m Right). Install secondary aerial cable between poles #3135WP and 3180. If necessary, due to the length of the new cable run, An intermediate service pole will be installed at a location designated by the property owner.

Schedule: PSE&G's required Notification Time is 130 working days. PSE&G requires 5 working days to complete their work.

Notes: all materials and labor for aerial construction to be provided by PSE&G. All materials and labor for underground construction to be provided by PSE&G

Verizon New Jersey, Inc. – Telephone

Existing Facilities

11/4" innerduct, 50X – 22GA, 100X – 22GA, 100X – 24GA, 200X – 24GA, 200X – 26GA, 300X – 22GA, 300X – 26GA, 400X – 22GA, 400X – 24GA, 400GA – 26GA, 600X – 22GA, 900X – 22GA, 1200X – 22GA, 48X Fiber, 96X Fiber, and 144X Fiber.

Work to be Performed by Verizon New Jersey, Inc.

1. Unidentified pole (Rt. 46 Sta. 93+630, 20.6 m Rt.) to pole 61517 (Rt. 46 EB Sta. 93+770, 20.5 m Rt.). Relocate 1 – 600X - 22 GA. CBL. 1 – 96X - Fiber in 1 - 1 1/4" inner duct, to the new higher poles between Rt. 46 EB Sta. 93+630 to Rt. 46 EB Sta. 93+770.
2. Pole 61517LF (Rt. 46 EB Sta. 93+770, 20.5 m Rt.) to pole 61513 (Rt. 46 EB Sta. 93+822.5, 20.5 m Rt.). Relocate 47 m of 1 – 1200X – 22GA.CBL. , 1 – 96X – Fiber CBL. in 1 - 1 1/4" inner duct, to the new higher pole line between Rt. 46 EB Sta. 93+770 to Rt. 46 EB Sta. 93+822.5.
3. Pole 61513LF (Rt. 46 EB Sta. 93+822.5, 20.5 m Rt.) to pole 61890 (Rt. 46 EB Sta. 93+961.5, 20.5 m Rt.). Relocate 143 m of 1 – 900X - 22 GA. CBL. to the new higher pole line between Rt. 46 EB Sta. 93+822.5 to Rt. 46 EB Sta. 93+861.5. Replace 1 – 100X - 24 GA. CBL. from new higher unidentified pole to pole E62264LF.
4. Pole 61890 (Rt. 46 EB Sta. 93+961.5, 20.5 m Rt.) pole 61891LF (Rt. 46 EB Sta. 94+064, 20m Rt.). Relocate 102 m of 1 -400X - 24 GA. CBL. to the new higher pole line between Rt. 46 EB Sta. 93+961.5 to Rt. 46 EB Sta. 94+064.
5. Pole 61891LF (Rt. 46 EB Sta. 94+064, 20m Rt.) to pole 61698LF (Rt. 46 EB Sta. 94+180, 20m Rt.) Relocated Pole 61698 To Pole 62140lf Ramp C (Sta. 1+258, 10m Rt.)Relocate 116 m of 1-400X-22GA. CBL. Rt.46 EB Sta. 94+177. Relocate 43m of 1-300X-22GA. CBL. Beginning At Newly Relocated Pole At Rt. 46 EB Sta. 97+177. Relocate 43m Of 1-300x-22GA. CBL. Beginning at newly relocated pole 61698 to existing unknown pole servicing Bob Ciasulli Toyota. Place 225 m of 1-100X-24GA. Cable between poles 605115 LF (Browertown Rd. Sta. 10+059, 5m Rt.) & pole 62140.
6. Pole 61698, (Rt. 46 EB Sta. 94+180, 20m Rt.) to pole 61892 (Ramp A Sta. 1+032, 0.6m Rt.). Remove line from existing poles and remove service to Mobil Gas Station.
7. Pole PS61173LF (Rt. 46 EB Sta. 94+527.5, 20.6m Rt.) to pole 61175LF (Rt.46 EB Sta. 94+628.7, 20m Rt.). Relocate 1 – 200X - 24 GA. CBL. to newly relocated poles at Rt. 46 EB Sta. 94+528.2 and 94+628.7.
8. Pole 61175LF (Rt. 46 EB Sta. 94+628.7, 20m Rt.) to pole 61177LF (Rte. 46 EB Sta. 4+730.7, 20m, Rt.). Relocate 1 – 100X - 22 GA. CBL. to newly relocated poles at Rt. 46 EB Sta. 94+628.7 and 94+730.7.
9. Pole 62128 (Rt. 46 WB Sta. 93+802, 20 m Lt.) to pole 61513 (Rt. 46 EB Sta. 93+821.8,20.6 m Rt.). Relocate 1 – 48X - Fiber CBL. and 1- 300X - 26GA. CBL. Beginning at existing pole 62128 to newly relocated pole at Rt. 46 EB Sta. 93+821.8, 20.6 m Rt.).
10. Pole B62182LF (Rt. 46 WB Sta. 94+546, 20m Lt.) to pole 62186LF (Rt. 46 WB Sta. 94+866, 21.6m Lt.). Relocate 1 – 200X - 24 GA. CBL. Beginning at newly relocated pole at Rt. 46 WB Sta. 94+551 to existing Pole B62185 and from existing pole 61778LF to newly relocated pole at Rt. 46 WB Sta. 94+866. Remove Phone Booth at Rt. 46 WB Sta. 94+569. Relocate 1 – 50XGA. CBL. Beginning at newly relocated pole at Rt. 46 WB Sta. 94+580 to existing pole 62218LF to Service Lexus. Relocate existing Service To Phone Booth from existing pole 61777LF to newly relocated pole at Rt. 46 WB Sta. 94+831.
11. Pole 60507LF (Browertown Rd. Sta. 9+746, 4.5m Rt.) to pole 60509 Browertown Rd. Sta.9+812, 5m Rt.). Relocate 1- 200X - 26 GA. CBL. and 1 – 400X- 26 GA. CBL. to newly relocated pole at Browertown Road Sta. 9+746 and Sta. 9+808.5. Relocate Cable Servicing Shop rite Shopping Center beginning at existing pole 60509LF to newly relocated pole at Browertown Road Sta. 9+808, 20m Rt.
12. Browertown Road Pole 60509LF (Browertown Rd. Sta. 9+812, 5m Rt.) to pole 60512 (Browertown Rd. Sta. 9+904, 6m Rt.). Relocate 1- 400X - 26 GA. CBL. Beginning at newly relocated pole at Browertown Road Sta. 9+809 to relocated pole 60512LF (Sta. 9+906, 5m Rt.).
13. Browertown Road pole 60512LF (Browertown Rd. Sta. 9+904, 6.0m Rt.) to pole 60515 (Browertown Rd. Sta. 10+059, 5m Rt.), Browertown Road pole 60515 (Sta.10+059, 5m Rte.) to pole 60443 (Sta. 9+974, 6m Rte.). Install 154m 5 - 102mm conduit underground between relocated poles 60512 (Sta. 9+906, 5m Rte.) and 60515 (Sta. 10+060, 8m Rte.). Relocate 1- 400x - 22 GA. CBL and 1 - 3492 - 144 Fiber cable. in to the new conduit temporarily Relocate cable running underneath Route 46. Run from temporary pole at Browertown Road Sta. 9+961 to newly relocated pole at Rt. 46 EB Sta. 94+531, during bridge construction. Temporarily relocate cable running underneath Route 46. Run from newly relocated pole at Rt. 46 EB Sta. 94+531 to newly relocated pole at Browertown Rd. Sta. 10+037, during Bridge Construction.
14. Browertown Road pole 60515LF (Browertown Rd. Sta.10+060, 5.8m Rt.) to pole 60445WP (Browertown Rd. Sta. 10+405, 4.5m Lt.). Relocate 1- 200x - 24 GA. CBL and 1 - 3492 - 144 Fiber cable to newly relocated poles at Browertown Road from Sta. 10+060 to Sta. 10+405 Remove Phone Booth at Browertown Rd. Sta. 10+114 and cables providing service to it from pole 60119WP. Relocate Cables Servicing adjacent properties from newly relocated poles.

15. Rt. 46 EB pole 60443 (Browertown Rd Sta. 9+974, 6m Rt.) to pole Ps2660LF(Rt. 46 Sta. 94+851, 20m Rt.). Relocate 1 - 3492 - 144 Fiber cable on newly relocated poles between poles 60512LF (Browertown Rd. Sta. 9+906, 5m Rt.) and PS2660LF (Rte. 46 Sta. 94+851, 20m Rt.)

Schedule: Required Notification Time is 30 Working Days. Verizon – New Jersey, Inc. requires 90 Working Days to complete their work and 100 days to complete splicing of new cables.

Notes: All materials and labor to be provided by Verizon - New Jersey, Inc.

Cablevision of Oakland – Cable Television

Existing Facilities

Fiber optic, .750 coaxial trunk and .625 feeder aerial cables.

Work to be Performed by Cablevision of Oakland

1. Browertown Road, pole 60507LF (proposed Browertown Road Sta. 9+746, 4.5m Rt.) to pole 60445WP (proposed Browertown Road Sta. 10+405, 4.5m Lt.). Permanently transfer 435m of existing aerial cable between relocated PSE&G poles 60507 (Sta. 9+743, 5m Rt.) and 60511 (Sta. 9+883, 9m Rt.) and between relocated PSE&G pole 60516 (Sta. 10+108, 9m Rt.) and 60445WP (Sta. 0+405, 5m Lt.). Place 225m existing aerial cable underground in 2-102mm ducts between relocated PSE&G poles 60511LF and 60516LF new 2-102mm ducts installed by state's contractor.

Schedule: Required Notification Time is 10 working days. Cablevision of Oakland requires 10 working days to complete there work.

Notes: All materials and labor (with the exception of the labor to install 2 - 102 mm ducts), is to be provided by Cablevision.

Work to be Performed by the Contractor

1. Place 225 m, new 2-102 mm ducts between poles 60511LF and 60516LF.

Notes: Ducts will be provided by Cablevision of Oakland.

Borough of West Paterson – Fire Alarm Cable

Existing Facilities

Aerial 1PR. 12GA. municipal fire alarm cable and three fire alarm pull boxes.

Work to be Performed by the Borough of West Paterson

1. Pole A62144WP (Browertown Rd. Sta. 10+423, 4.5m Lt.) to Light Pole (Ramp C Sta. 1+165, 70 M Rt.). Install 80m of 1 PR. 12 GA. Municipal Fire Alarm Cable along the newly relocated pole line between Pole A62144WP and newly relocated Pole E60444. Install 215m of 1 PR. 12 GA. Municipal Fire Alarm Cable along the existing Light Poles between relocated Pole E60444 and the Existing Light Pole in the parking lot with the Fire Box on it. Install 150m of 1 PR. 12GA. Municipal Fire Alarm Cable between relocated Poles E60444 and A60317. Remove existing cable.

Schedule: Required notification time is 45 working days. Borough of West Paterson requires 5 working days to complete their work.

Notes: All materials and labor to be provided by Borough of West Paterson.

Public Service Electric & Gas Company - Gas Facilities

Existing Facilities

50mm and 150mm plastic, 50mm and 75mm steel and 100mm, 150mm and 200mm cast iron gas mains and six (6) associated valve boxes.

Work Performed by Contractor

1. Browertown Rd. Sta. 10+343, 1.2m Lt. to Sta. 10+343, 10.2m Lt. Install 3 meters of new 150mm plastic gas main 1.0m below proposed grade. Install 1 Spherical Valve Fitting, to allow live tap into existing pipe. Existing facilities to be removed or abandon
2. Rt. 46 EB, Sta. 94+579, 19.2m Rt. to Sta. 94+838, 19m Rt. Install 265 m of new 75 mm plastic gas main behind proposed curb line of acceleration lane. Install 1 Spherical Valve Fitting, to allow live tap into existing pipe. Install new valve box sets to proposed grade.
3. Rt. 46 WB, Sta. 94+008, 22 m Lt., along existing WB Ramp to Browertown Road Sta. 10+075. Install 336 meters of new 100 mm plastic gas main 1.0m below proposed grade. Install 81 meters of new 50 mm gas service direct burial to Park West Diner and gas service directional drill to Pizza 46, 1.0m below proposed grade. Install 1 Spherical Valve Fitting; to allow live tap into existing pipe. Remove or abandon existing facility from Park West Diner, along existing WB Ramp, to Browertown Road.
4. Browertown Road Sta. 9+785 to Sta. 9+826. Install 41 meters of new 200mm plastic gas main 1.0m below proposed grade. Install 6 meters of new 150mm plastic gas main extension to existing Shop rite line. Install 1 Spherical Valve Fitting; to allow live tap into existing pipe. Install new valve box set to proposed grade. Existing facilities to be removed or abandoned.
5. Browertown Road Sta. 9+826 to Sta. 10+172. Existing facility to be removed or abandoned. Valve Box to be removed or abandoned.
6. Browertown Road Sta. 10+172 to Sta. 10+400. Install 228 meters of new 200mm plastic gas main 1.0m below proposed grade. Install 1 Spherical Valve Fitting; to allow live tap into existing pipe. Existing facilities to be removed or abandoned.
7. Browertown Rd. Sta. 10+174, 3m Lt. to Briarwood Ct. Sta. 3+047, 2m Rt. Install 180 meters of new 100mm plastic gas main 1.0m below proposed grade. Install 1 Spherical Valve Fitting, to allow live tap into existing pipe. Existing facilities to be removed or abandoned.

Schedule: Required Notification Time is 10 Working Days. No Work is to be performed on gas facilities from October 1 through April 31.

Notes: A Three (3) months Notification Time to PSE&G is required before any demolition activity.

Work Performed By PSE&G Gas

1. Browertown Road and E. Main Street (Long Hill Road) Intersection. Off Site Work: Install Regulator to Service Properties on Browertown Road South of Rose Street.

Schedule: Required Notification Time Is 10 Working Days And 30 Working Days to complete. Installation must be completed prior to taking the line in Browertown Road out of service. Work is to be performed on gas facilities between April 31 to October 1.

2. PSE&G will Supply all materials for gas work except necessary select backfill aggregates, minor accessories and concrete.

Schedule: Required Notification Time to provide material is 10 Working Days.

3. PSE&G will be responsible for capping, purging, cutting the pipeline, and for all stop-off work, and for connecting existing pipe to new pipe.

Schedule: Required Notification Time is 10 Working Days.

Borough of West Paterson – Sanitary Sewer

Existing Facilities

Sanitary Sewer manholes and 200 mm PVC Sanitary Sewer Mains.

Work to be Performed by Contractor

1. Browertown Road. Sta. 10+170 to Browertown Road Sta. 10+196. Reconstruct Manhole at Browertown Rd. Sta. 10+172.4, Sta. 10+186, Sta. 10+196, Briarwood Court Sta. 3+009, and Sta. 3+047 to meet Proposed Grade.
Schedule: Constructed as part of the Contractor's surface course operation.
Note: Casting will be supplied by State Contractor.

Work Performed By Borough of West Paterson

1. Inspect facilities constructed by State Contractor

Schedule: Borough of West Paterson will require 5 working days notice to provide inspection to the project side.

Township of Little Falls – Sanitary Sewer

Existing Facilities

Sanitary Sewer manholes and 250mm cast iron and 300mm P.V.C. sanitary sewer mains.

Work to be Performed by Contractor

1. Route 46 WB Sta. 94+508 to Sta. 94+682.4 Route 46 EB Sta. 94+620 to Route 46 EB Sta. 94+700. Construct new manholes at Rt. 46 Sta. 94+523, 21m left, 94+521.5, 23.5 m left, and at Browertown Road Sta. 10+225, 7 m right, 9+958, 6 m right, and 9+955, 8 m right. Install 65 m of 250 mm and 20 m of 200mm D.I.P. sanitary sewer main. Reset existing manholes and install water tight casting and cover to meet proposed grade at Rt. 46 Sta. 94+541.7, 94+611, and 94+682.4. Abandon manholes at Route 46 Sta. 94+508 and Sta. 94+520. Cap and abandon laterals to properties being acquired.
2. Browertown Rd. Sta. 9+755.5 B to Browertown Rd. Sta. 10+021.4. Reset manholes at Browertown Rd. Sta. 9+755.5, Sta. 9+816.2, and Sta. 10+021.4. Reconstruct manhole at Browertown Rd. Sta. 9+956.8 to meet proposed grade.
3. Rose St. Sta. 4+866.5 to Sta. 4+903.8. Construct manholes at Rose St. Sta. 4+738, 0.5 m right, Sta. 4+877, 6 m right, and Sta. 4+921, 5.5 m left.
4. Rose St. Sta. 4+738 to Sta. 4+776. Reconstruct manhole at Rose St. Sta. 4+749 to meet proposed grade. Construct manholes at Rose St. Sta. 4+776, 6 m right, and Sta. 4+780, 6 m right. Install 37 m of 300 mm D.I.P. sanitary sewer main to connect manholes. Extend laterals to Shop rite shopping center.
5. Rose St. Sta. 4+776 to Sta. 4+921. Install 145 m of 250 mm D.I.P. sanitary sewer main. Abandon manholes and sewer main between Rose St. Sta. 4+738 and Sta. 4+921.
Schedule: Required Notification Time is 45 working days.
Note: Casting and materials will be supplied by state (Contractor)

Work Performed By Township of Little Falls

1. The Township will observe the State contractor's construction.
Schedule: The Township requires 45 working days Notification to provide inspection.

New Jersey – American Water Company – Public Water

Existing Facilities

Nine (9) fire hydrants, five (5) valve boxes and 150mm and 200mm cast iron water mains.

Work to be Performed by Contractor

1. Browertown Road Sta. 9+734, 2.7m Rt. to Sta. 9+960, 2m Rt. Install 220m of new 400mm, D.I.P. Water Main, 1.0m below proposed grade. Relocate hydrant to Sta. 9+733, 5m Rt. Reset hydrant to proposed grade. Install new valve at Sta. 9+846, 2m Rt. Install 3 new valves at Sta. 9+893, 2m Rt. Install 400mm D.I.P.

- connection to Passaic Valley Water Commission Line. Remove or abandoned existing 8" C.I. Water Main. Includes betterment from 200mm (8") to 400mm (16")
2. Browertown Road Sta. 9+960, 2m Rt. to Sta. 10+180, 7m Rt. Install 220m of new 400mm, D.I.P. Water Main, 1.0m below proposed grade. Reset hydrant to proposed grade and reconnect using 150mm D.I.P. Water Main. Install 3 new valves at Sta. 9+975, 2m Rt. Install 3 new valves at Sta. 10+102, 6m Rt. Install 1 new valve at Sta. 10+182, 7m Rt. Remove or abandoned existing 6" C.I. Water Main. Note: Includes betterment from 150mm (6") to 400mm (16").
 3. Browertown Road Sta. 9+975, 2m Rt. to Rt. 46 Sta. 94+532, 17.5m Rt. Install 30m of new 300mm D.I.P. Water Main, 1.0m below proposed grade. Note: Includes betterment from 150mm (6") to 300mm (12"). Install 1 new 300mm valve.
 4. Browertown Road Sta. 10+102, 6m Rt. to Sta. 10+105, 19m Lt. Install 27m of new 400mm D.I.P. Water Main within Utility Easement 1.0m below proposed grade. Install 3 new valves at Sta. 10+102, 6m Rt. Remove or abandon existing 6" C.I. Water Main. Note: Includes betterment from 150mm (6") to 400mm (16").
 5. Browertown Rd. Sta. 10+182, 7m Rt. to Briarwood Ct. Sta. 3+048, 4m Lt. Install 38m of new 200mm D.I.P. Water Main 1.0m below proposed grade. Remove or abandon existing 6" C.I. Water Main.
 6. Rt. 46 Sta. 94+018.4, 20m Rt. to Rt. 46 Sta. 94+700, 19.0m Rt. Relocate hydrant to Sta. 94+015, 20m Rt., Relocate hydrant to Sta. 94+088.4, 20m Rt., Relocate hydrant to Sta. 94+181.6, 21.6m Rt., Relocate hydrant to Sta. 94+592.2, 21m Rt., Relocate hydrant to Sta. 94+634, 21.3m Lt., Relocate hydrant to Sta. 94+707, 22m Rt. Relocate hydrants using 150mm D.I.P. Water main. Reset valve boxes to proposed grade.
 7. Rt. 46 EB Sta. 94+181.8, 18.0 m Rt. to Rose St. Sta. 4+773, 8.8 M Rt. From existing main, 157 m of new 300mm, D.I.P. Water Main, 1.0m below proposed grade. Install 2 new 300 mm water valves along new main.
 8. Rose St. Sta. 4+766, 8.8 m Rt. to Browertown Road Sta. 9+886, 3.0 M Rt. Install 229 m of new 300 mm D.I.P. Water Main, 1.0 m below grade. Install 2 new 300 mm water valves along new main. Install fire hydrant with 150 mm D.I.P. lateral and valve.
 9. Browertown Rd. Sta. 10+180, 7m Rt. to Browertown Rd. Sta. 10+420, 6.0 m Rt. Install 240m of new 400 mm D.I.P. water main, 1.0 m below grade to meet existing. Install 2 new 400 mm water valves along new main. Install 1 new standard chamber for meter, check valve, PRV.

Schedule: Required Notification Time is 45 working days.

Notes: All work to be performed by State's contractor using a subcontractor from New Jersey - American Water's pre qualified list of contractors.

Work Performed By New Jersey – American Water Company (NJAWC)

1. Materials will be supplied by New Jersey – American Water Company.
Schedule: Required Notification Time is 45 working days.
2. NJAWC personnel will perform part time observation.
Schedule: Required Notification Time is 45 working days.

City of Newark – Water Transmission Mains

Existing Facilities

1219mm (48") water transmission main, a 1067mm (42") water transmission main, Manhole No. 104 and chamber.

Work to be Performed by Contractor

1. Ramp C Sta. 1+177, 13m Rt. to Browertown Rd. Sta. 1+114, 7m Lt. NJDOT to construct roadway embankment for proposed Ramps C and D, varying from 0 - 3.6 m over existing grade. 150m of 1219mm (48") transmission main to be replaced with new Prestressed concrete cylinder pressure pipe.
2. Ramp C Sta. 1+180, 12m Rt. to Browertown Rd. Sta. 1+111, 8m Lt. NJDOT to construct roadway embankment for proposed Ramps C and D, varying from 0 - 3.6 m over existing grade. 150m of 1067mm (42") transmission main to be replaced with new Prestressed concrete cylinder pressure pipe.
3. Browertown Rd. Sta. 1+110, 17m Lt. Chamber to be reconstructed in conjunction with replacement of transmission main. Manhole rim to be set at proposed finished grade.

Schedule: Required Notification Time is 45 working days. To be performed during March 15 to May 15 and October 1 to December 15.

Note 1: All work to be performed by state's contractor using a subcontractor from City of Newark Water's pre qualified list of contractors. Only one line may be shut down at a time. Coordinate shutdowns with Passaic Valley Water Commission.

Note 2: State Resident will coordinate with The City Of Newark.

Note 3: State will supply materials.

Work Performed By City Of Newark

1. City will operate all valves and observe contractor's work.

Schedule: Required Notification Time is 45 working days.

Passaic Valley Water Commission – Water Transmission Main

Existing Facilities

1295mm (51") water transmission main, 1524mm (60") water transmission main, valves and five (5) poles with abandoned aerial electric cables.

Work Performed by Contractor

1. Rt. 46 WB, Sta. 94+015, 66m Lt. To Sta. 94+035, 71m Lt. NJDOT to construct driveway connection. Reset Valves to proposed grade.
2. Rt. 46 WB, Sta. 94+231, 81m Lt. to Sta. 94+241, 81m Lt. NJDOT to remove existing pavement, curbs, and guide rail and replace with topsoil and seeding.
3. Ramp C Sta. 1+205, 23m Rt. to Sta. 1+194, 5m Rt. NJDOT to remove existing driveway pavement and curb and replace with topsoil and seeding.
4. Ramp C Sta. 1+205, 5m Rt. to Browertown Rd. Sta. 10+106, 6m Lt. NJDOT to construct roadway embankment for proposed Ramps C and D varying from 0-3.6m over existing grade. 150 m of standard size 1295mm Water Main and 1524mm Water Main to be replaced with new 1350mm (54") heavy gauge Steel Pipe with welded joints. Isolation Valves must be furnished and Installed at both ends of the Water Main. Valves should be a minimum 48" Diameter Gate Valves. Install 1350mm Steel Pipe closure fittings and a 1350mm by 400mm Tee. Supply and Install Chamber at NJ American Water Company Tap.

Schedule: Required Notification time is 7 Working Days. Work to be performed during October 1 to May 1. Isolation Valves must be installed before Water Main relocation begins.

Note 1: All work to Be performed by State's contractor using a subcontractor from Passaic Valley Water Commission's pre qualified list of contractors. Only one line may be shut down at a time. Coordinate shutdowns with City.

Note 2: State Resident Engineer will coordinate with Passaic Valley Water Commission.

Note 3: Water will be purchased from City of Newark for the duration of PVWC'S shutdown

Note 4: State's contractor to supply all materials.

5. Unidentified pole (Ramp C Sta. 1+186.5, 4.5m Rt.) to unidentified pole Browertown Rd. Sta. 10+111, 45m Right). Poles and Cables to be removed. (See Note 2)

Schedule: Required Notification Time is 7 working Days.

Note 1: All Work to be performed by State's contractor using a subcontractor from Passaic Valley Water Commission's pre qualified list of contractors.

Note 2: These poles and cables are the remnants of an abandoned electric system owned by PVWC that went to Pumping Stations.

Work Performed By Passaic Valley Water Commission

1. Passaic Valley Water Commission's personnel will observe state's construction

105.15 Field Office.

1. Construction Field Offices.

a. Type A.

THE FOLLOWING IS ADDED:

- (1) Three multi-line touch-tone telephones and 2 telephone lines for use with the telephones installed as directed and operational in the Field Office and other facilities specified.
- (a) Three dedicated, operational telephone line(s) for Fax machines (s) and/or microcomputer system(s) modem use installed as directed in the Field Offices specified.
- (b) Two portable hand held cellular phone(s). The cellular telephone plan shall provide for the anticipated usage of approximately 300 minutes per telephone per month. Each of the cellular phones shall have as a minimum the following features:
 - 1) Home rate with no roaming charges within the entire state
 - 2) 832 Channel Compatible
 - 3) Mute Function
 - 4) Back Light Display with Battery Saver
 - 5) Signal Strength Indicator
 - 6) Individual Call Length Timer
 - 7) Full Lock Function
 - 8) 30 Memory Number Feature
 - 9) Low Battery Warning
 - 10) 70 Minute Continuous Use
 - 11) 12 hour Standby Mode
 - 12) Alphanumeric Display
 - 13) Transmission Power 0.6 Watt
 - 14) Passive Repeating Antenna for Vehicle
 - 15) Spare high capacity Battery Pack
 - 16) Home Charging Station
 - 17) Cigarette lighter power adapter /charger
 - 18) AC charging station
- (c) Two pager units. The number should be an exchange local to the Project. The units shall have the following features:
 - 1) Lighted Alphanumeric Display
 - 2) Tone and Vibrator Alert
 - 3) High Sensitivity
 - 4) Message Storage
 - 5) Statewide Coverage
 - 6) Exchange Local to Project
 - 7) LCD Readout
- (d) One telephone answering machine
- (17) The microcomputer system shall include the following:
 - (a) Two base computer system(s) having at minimum:
 - 1) Pentium IV Processor at 1.5 GHz or faster, Intel processor with MMX technology, with a 512 MB RAM, 32 MB Video RAM, mouse, mouse pad, 60 GB hard drive, one 52X DVD-ROM Drive, one CD-R Recordable Drive, and one 90-millimeter (3½-inch), 1.44 MB floppy diskette drive installed as the "A" drive.
 - 2) 56K baud data/fax modem. (e.g., 3Com U.S. Robotics 56K Faxmodem, 3Com U.S. Robotics Courier V.Everything/V.34 - 56K ITU / x2 Technology, or Hayes Accura 56K).
 - 3) One network card for each base computer system specified, when more than one base computer is specified
 - 4) One Fast Ethernet Hub Switch with appropriate number of ports and cables (e.g., 3COM 100 Hub)
 - 5) One dedicated telephone line to be used in conjunction with the microcomputer modem.
 - 6) 483-millimeter (19-inch) or larger Super VGA color monitor having a dot pitch of 0.28, with anti-glare screen, and tilt/swivel capabilities.

- 7) 250-Megabyte Zip Drive internal or external with backup software for MS Windows and thirty 250-Megabyte formatted data cartridges corresponding to the tape drive size (e.g., Iomega Zip Drive or equivalent).
- 8) Uninterruptible power supply (UPS) - OMNI 1000 or approved equal (e.g., APC-1000 - American Power Corporation).
- 9) Surge protector for the entire computer workstation to be used in conjunction with the UPS (e.g., Zero Surge Power, Inc. - Point of Use - 2R-15 amp/120 volts).
- 10) Static mat, floor type, 1.2 by 1.5 meters or larger with grounding capabilities.
- 11) Computer workstation, printer stand, and/or table having both appropriate surface and chair height.
- 12) Five boxes of 90-millimeter (3½-inch) floppy diskettes that match the drive density of the 1.44-MB floppy diskette drive (ten per box).
- 13) 150 CD-R 700-MB (or larger) recordable CD's compatible to CD drive.
- 14) One floppy diskette holder (holds 50 floppy diskettes), and dust covers for the microcomputer, monitor, keyboard, and printer.
- 15) Two head cleaner kits for 90-millimeter (3½-inch) floppy diskette drive.
- (b) One base printer having at minimum:
 - 1) Laser printer having HP PCL 5 emulation, with a 64 Megabyte expanded memory, appropriate printer cable, and legal size tray (e.g., HP-2200 or equivalent).
 - 2) One printer toner cartridge every other month for the duration of the construction project.
 - 3) One 10-ream carton of 8½ X 11 inches size paper (500 sheets per ream, weight: 75 grams per square meter, color: white, grain: long, for laser printers and copiers) every two months for the duration of the construction project.
 - 4) One 10-ream carton of legal size paper (500 sheets per ream, weight: 75 grams per square meter, color: white, grain: long, for laser printers and copiers) every three months for the duration of the construction project.
- (c) One software package, on CD-ROM with documentation, including:
 - 1) Microsoft Windows, latest version with future upgrades.
 - 2) Microsoft Office Professional, latest version. Software package should contain the following: word processor, spreadsheet, and database.
 - 3) Helix Nuts and Bolts Advanced Utilities for Windows, latest version, or compatible software package.
 - 4) Anti-Virus software, latest version with monthly updates (e.g., Norton's Anti-Virus, McAfee Anti Virus, or Dr. Solomon's).
 - 5) Visio Professional Graphics Software for Windows, latest version.
- (d) One base printer(s) for Primavera having at minimum:
 - 1) Color Inkjet printer of current technology, with appropriate printer cable.
 - 2) Ink cartridge replacements, one of each color, every other month for the duration of the construction project.
 - 3) One 10-ream carton of 8½ X 11 inches size paper (500 sheets per ream, weight: 75 grams per square meter, color: white, grain: long, for laser printers and copiers) every three months for the duration of the construction project.
- (e) One Primavera Project Planner (P3) or equivalent software, latest version.

To be approved as a Substitute or "Or Equal", the software must be completely compatible with the Department database that contains the Capital Program Management's design process schedule and budget, as well as the construction scheduling from design through construction. The software shall be compatible with the hierarchy of the coding and able to import and export data within the Department's Capital Program Management's database without distortion of any coding or relationships contained in the database.

The Contractor shall only utilize equivalent or compatible software for a project, which has received written approval from the Department in accordance with the most current NJDOT Capital Program Management Construction Scheduling Standard Coding and Procedures for Designers and Contractors Manual. The approved equivalent/compatible software utilized shall not vary throughout the construction phase.

The following additional equipment shall be furnished by the Contractor for the exclusive use of the Resident Engineer. This equipment shall conform to the applicable ASTM designation, when appropriate, and be in good working condition. The Contractor shall repair or replace damaged equipment throughout the duration of the Contract. The equipment shall become the property of the Contractor after Acceptance:

- (18) Five (5) each: hard hats (Orange in color, reflectorized) and safety vests (Orange in color, reflectorized). Hard hats and safety vests are to be replaced yearly for the duration of the project.
- (19) Five (5) sets: ear protection and eye protection.
- (20) Concrete testing equipment to include: Concrete receptacle (wheel barrow), square tipped shovel, concrete scoop, slump cone & base set (rod, slump cone, base and funnel), tamping rod (305 mm long, 10 mm diameter with hemispherical ends), 305 mm (12 inch) ruler, Forney air meter (complete set) or equivalent, two concrete thermometers, sponge, long-handled round scrub brush, rubber or rawhide mallet (1.02 +/- 0.23 kg), pointed trowel, 18.9 liter (5 gallon) plastic bucket, concrete cylinder curing box with high-low thermometer.
- (21) One (1) Smart level
- (22) Six (6) two-meter folding wood rules
- (23) Two (2) thirty-meter cloth tape measures
- (24) One (1) thirty-meter steel tape measure
- (25) Three (3) fifteen-meter cloth tape measures
- (26) Three (3) line levels and cords
- (27) One (1) surface thermometer
- (28) Two (2) asphalt thermometers
- (29) One (1) sledge hammer
- (30) One (1) metric measuring wheel
- (31) One (1) wet film thickness gauge
- (32) One (1) Polaroid camera with flash and one roll of film per month
- (33) Four (4) lanterns for night work with one replacement battery each per month

SECTION 106 – CONTROL OF MATERIAL

106.06 Materials Field Laboratory

THE FOLLOWING IS ADDED AFTER THE FIRST PARAGRAPH:

The Contractor shall annually pay all fees necessary to procure and maintain a Uniform Code Type Four Fire Permit according to regulations of the New Jersey Department of Community Affairs. Additional information concerning the permit fees and processing of the application may be obtained by contacting the Bureau of Materials.

THE LAST SEVEN PARAGRAPHS ARE CHANGED TO:

Setting up the materials field laboratory shall consist of furnishing the laboratory and enclosure complete with furniture, equipment, electricity, water, heating, air-conditioning, installation and activation of telephone lines, telephone sets (touch tone and cellular), pager units, sanitary facilities, and lavatory supplies.

Maintenance of the materials field laboratory, for the time required, shall consist of maintaining the furniture, equipment, and utilities which includes the cost of telephone fixed monthly service charges, cellular phone fixed monthly service charges for the plan specified and pager services, providing lavatory supplies, janitorial and waste disposal services weekly, restocking of the first aid box, and snow removal services. Maintenance of the materials field laboratory shall also include monthly rent.

Payment for nuclear density gauge will be made by the number of units supplied.

Payment for setting up the materials field laboratory will be made by the number of units.

Payment for the maintenance of the materials field laboratory will be made for each month or fraction thereof that the materials field laboratory is required, except that payment will not be made for any month or fraction thereof in which the Contractor is assessed liquidated damages according to Subsection 108.16.

Payment will be made under:

<i>Pay Item</i>	<i>Pay Unit</i>
NUCLEAR DENSITY GAUGE	UNIT
MATERIALS FIELD LABORATORY SET-UP	UNIT
MATERIALS FIELD LABORATORY MAINTENANCE	MONTH

Payment for telephone service will be made according to Subsection 108.15.

SECTION 107 - LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

107.22 Risks Assumed by the Contractor

SUBPART 1 IS CHANGED TO:

1. **Risks of Loss or Damage to the Permanent Construction.** Until Acceptance, and within the limits of the Project's work, the Contractor shall bear the risk of all loss or damage to all permanent construction and temporary construction performed under this Contract and to materials, whether or not it has received payment for such construction or materials under Subsection 109.05, 109.06, or 109.07, except payment will be made to the Contractor for the repair or replacement of any permanent element of the construction which has not been accepted by the Department, if the element of the work damaged is completed to the stage of serving its intended function and is subsequently damaged by accident by public traffic. In order to receive payment, the Contractor must supply satisfactory evidence that such damage was caused by a public traffic accident which was not caused by vandalism or by the equipment of the Contractor or any of its subcontractors or suppliers. Satisfactory evidence shall generally be limited to: accident reports filed with the Division of Motor Vehicles, police agencies or insurance companies; statements by reliable, unbiased eye witnesses; identification of the vehicle involved in the accident. Physical evidence that the damage was caused by a motor vehicle (such as tire marks or broken headlight glass) will not be sufficient unless it can be clearly shown that the damage was not caused by the Contractor's vehicles or by vandalism. The Contractor shall take every precaution, as allowed by the Contract against injury or damage to any part of the construction or to materials by the action of the elements, the traveling public, vandalism, or from any other cause, whether arising from the execution or the non-execution of the work. The Contractor shall promptly repair, replace, and make good any such damage or loss without cost to the Department. The Contractor shall not bear such risk of loss or damage, which arises from acts of war or floods, tidal waves, earthquakes, cyclones, tornadoes, hurricanes, or other cataclysmic natural phenomenon unless such loss or damage is covered by insurance.

SECTION 108 - PROSECUTION AND PROGRESS

108.02 Subcontracting.

Specialty Items are as listed below:

Drilling and blasting.
Above ground highway lighting items.
Above ground sign lighting items.
Above and below bridge deck lighting items.
Electrical wire items.
Chain-Link Fence in bridges.
Railing

108.03 Commencement of Work.

THE THIRD SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

Construction operations shall not begin until the Contractor has supplied, and the Engineer has accepted, the preliminary schedule and other certifications, forms, schedules, and any other information required by the Contract Documents, and until the Contractor has established a field office as required by Subsection 105.15.

108.04 Progress Schedule and Prosecution of the Work.

THIS SUBSECTION IS CHANGED TO:

In scheduling and executing the Work, the following shall be complied with:

1. **Progress Schedules.** The progress schedule shall conform to and incorporate the following requirements:
 - a. **General.**

- (1) The work shall be monitored by a detailed CPM schedule. The CPM schedule shall be developed utilizing the most current NJDOT Capital Program Management Construction Scheduling Standard Coding and Procedures for Designers and Contractors Manual and the NJDOT Primavera template project containing the latest standard coding. The manual and template are available from the Bureau of Quality Management Services.

The CPM schedule shall consist of diagrams and accompanying mathematical analyses. The scheduling of submittals, procurement, construction, and all else necessary to complete the Work as described in the Contract Documents, is the responsibility of the Contractor. The requirement for the CPM schedule is included to ensure adequate planning and execution of the Work and to assist the Department in appraising the reasonableness of the proposed schedule, as well as its compliance with Contract requirements.

The CPM schedule is the Contractor's committed plan to complete all work within the allotted time. The Contractor assumes full responsibility for the prosecution of the Work as shown. The CPM schedule shall be based on and derived from detailed schedules used to complete all Contract activities.

- (2) No claim for extension of time due to extra work or any other type of delay will be considered unless the baseline schedule has been approved and monthly updates are current and submitted within the time limits stated.
- (3) No claim for additional compensation as specified in Subsection 109.04 will be considered unless the baseline schedule has been approved and monthly updates are current and submitted within the time limits stated.
- (4) The CPM preliminary, baseline, and updated schedules shall be submitted in electronic format on a floppy diskette or compact disk, in addition to the required number of copies specified in b. (1) and b. (2) below.
- (5) Once the CPM baseline schedule has been approved, the Contractor shall not deviate therefrom without first notifying the Engineer in writing and schedule is updated in accordance with 1.h. and 1.i. below.

b. Submittals. The CPM schedule shall consist of the following two distinct initial submittals:

- (1) **Preliminary Schedule.** No later than 10 State Business Days after execution of the Contract, the Contractor shall submit to the Engineer for review and approval or rejection and return a preliminary schedule. The contractor shall submit six copies of:
 - (a) A CPM time-scaled diagram defining the Contractor's planned activities during the first 90 Calendar Days. For projects with a construction cost over \$ 40 million, a CPM time-scaled diagram defining the Contractor's planned activities during the first 120 Calendar Days.
 - (b) A summary network for the remainder of the Contract time. The preliminary schedule shall indicate all milestone activities expected to be completed or partially completed before submission and approval of the CPM baseline schedule as specified in b. (2) below.
 - (c) All multiple shifts per day and anticipated production rates shall be detailed in the Contractor's narrative accompanying the preliminary schedule.
 - (d) The Work shall not begin until the preliminary schedule has been approved. Five State Business Days will be required for review and approval or rejection and return of the preliminary schedule.
- (2) **Baseline CPM Schedule.** In accordance with the time frames listed below, the Contractor shall submit six copies of the Baseline CPM Schedule documents depicting the Contractor's work plan for the entire Contract.

Project Construction Cost (\$ million)	Time Frame After Approval of Preliminary Schedule for Submission of the Baseline CPM Schedule (State Business Days)
< 5	10
5 - 15	15
15 - 40	20
> 40	30

The Contractor shall submit to the Engineer for review and approval or rejection and return:

- (a) Computer generated tabular schedule and logic reports in accordance with 1.e. below.
 - (b) Time-scaled computer generated Layout Output in conformance with 1.f. below.
 - (c) A written narrative explaining the schedule and the Contractor's general approach for achieving Substantial Completion and the date of Completion as specified in Subsection 108.10 of these Special Provisions. Multiple shifts per day and anticipated production rates shall be detailed in the Contractor's narrative accompanying the Baseline CPM Schedule.
 - (d) Electronic version as specified in 1.a. (4) above.
- c. CPM Schedule Requirements for the Baseline and Updates.**
- (1) The CPM schedule and updates shall contain the following:
 - (a) The order in which the Contractor proposes to prosecute the Work; the starting dates of the various work stages, operations, and principal items of work including procurement of materials and plant, and the contemplated dates for completing the same.
 - (b) List dates for all required submissions.
 - (c) A clear outline of the intended maintenance of traffic.
 - (d) The locations and timeframes for the installation of temporary and permanent soil erosion and sediment control measures to be installed.
 - (e) All unusual requirements specific to the project included in the Contract Documents or as deemed appropriate for the project.
 - (f) Special consideration to sensitive areas such as wetlands, floodplains, waterways, and parklands to ensure that appropriate staging and seasonal constraints are considered in order to maximize the effectiveness of the soil erosion and sediment controls.
 - (g) The time frames when work is restricted in sensitive areas as reflected in present and future permits as anticipated or known.
 - (h) Updates to reflect permit conditions if changed.
 - (i) Include a detailed, step-by-step outline of any clean-up operations regarding contaminated material.
 - (j) The work of the Contractor, subcontractors, suppliers, the Department, permitting agencies, utility companies, and all others that affect progress shall be shown and identified on the schedule by responsibility codes.
 - (k) Procurement activities shall be shown, including plans, permits, materials, individual working drawings, fabrication, and delivery of the material. 20 State Business Days will be required for review and certification or rejection and return of fabrication working drawings. 30 State Business Days will be required for review and approval or rejection and return of working drawings for items that were included as conceptual and the Contractor is required to complete final design plans. The time frames set forth in this paragraph are provided for scheduling purposes only. The Department reserves the right to enlarge such time periods for review by a reasonable amount of time where circumstances necessitate, within the sole discretion of the Engineer.
 - (l) Traffic staging, delivery of Department - furnished labor/equipment, project phasing, right-of-way availability dates, and any other requirements specified in Divisions 200 through 900 shall be shown.
 - (m) The CPM schedule shall contain sufficient activities to adequately depict the Work, and will be subject to the review and approval of the Engineer.
 - (n) The logic and activity time durations established by the Contractor shall be consistent with the Contract Documents and be reflective of proper coordination between trades.
 - (2) The CPM schedule shall operate as follows:
 - (a) The CPM schedule shall be of the precedence type.
 - (b) One activity for each discrete component part of each Pay Item scheduled in the Proposal. The Engineer may allow grouping of similar Pay Items into one activity. No work activity shall have a duration greater than 30 Calendar Days, except as approved by the Engineer. The activities shall be consistent with the Work Breakdown Structure (WBS), and shall also include discrete component parts of the Contractor's submittal preparation, Department approval, procurement, and construction work activities with sufficient detail such that all the relationships with all direct and non-direct parties to the Work are shown.
 - (c) The system shall be based upon network diagrams and accompanying mathematical tabulations as described hereinafter. Diagrams shall show the order and interdependence of activities and the sequence and quantities in which work is to be accomplished. The basic concept of network

scheduling shall be followed to show how the start of a given activity is dependent on the completion of preceding activities and how its completion may affect the start of subsequent activities. The critical path shall be distinguished from other paths on the network.

- (d) The completion date of the CPM schedule shall be the date of Completion specified in Subsection 108.10 of these Special Provisions, except as specified in Subsection 108.04 subpart 5, which shall be input as a Finish Milestone with a Late Finish Constraint. All Intermediate Milestones required in the Contract shall be shown in proper logical sequence and input as a "Start-no-Earlier-Than" constraint for entrance into an area or start activity or a "Finish-no-Later-Than" constraint date for completions.
- (e) Activities shall be described such that the Work is readily identifiable for assessment of start and completion, as well as intermediate status. Descriptions shall utilize activity codes for physical locations at each stage such as distance-markers, structures, and elevations where possible to define the Work. Activity descriptions of "Start," "Continue," "Completion," "X percent," "Y percent," "Z percent" or similar nonspecific descriptions will not be allowed.
- (f) The CPM schedule shall be calculated in Working Days. The Working Day to calendar date correlation shall be based upon the Contractors proposed work week with adequate allowance for weekends, legal holidays and any special requirements of the Contract. Activities shall indicate the calendar being used. Durations for activities shall not be less than one workday. Multiple shifts per day and anticipated production rates shall be detailed in the Contractor's narrative accompanying the baseline schedule and subsequent updates.
- (g) Constraint dates are permitted only on milestone activities, unless otherwise approved by the Engineer.
- (h) All activities with the exception of the Project Start Milestone and Project Completion Milestone shall have predecessors and successors. The start of an activity shall have a Start-to-Start or Finish-to-Start relationship with preceding activities. The completion of an activity shall have a Finish-to-Start or Finish-to-Finish relationship with a succeeding activity. Start-to-Finish relationships are not acceptable.
- (i) CPM schedules, which have been resource leveled, are permissible, provided the effects of leveling are incorporated in the schedule using "Start-no-Earlier-Than" date constraints.
- d. **Computer Program Requirements.** The computer program requirements shall be the same as that specified in Subsection 105.15 subpart 1.e. of these Special Provisions.
- e. **Tabular Reports.**
 - (1) CPM schedule reports shall be provided for the following sort orders:
 - (a) Total float, then early start for activities with float less than 20 days.
 - (b) Grouped by responsibility, then by early start.
 - (c) Grouped by WBS, area, then sorted by early start.
 - (2) The minimum activity information required for each of the above reports in (1), shall include the following:
 - (a) A unique activity ID for each activity.
 - (b) A description of the Work represented by the activity.
 - (c) Location code identification.
 - (d) Work responsibility code identification.
 - (e) Original activity duration and remaining activity duration in Working Days.
 - (f) Early and late, start and finish dates calculated according to CPM principles.
 - (g) Total float.
 - (h) Historical (actual) dates for activities completed or underway shall replace the appropriate calculated dates.
 - (i) Stages.
 - (j) Calendar used for each activity.
- f. **CPM Time-Scaled Layout Output.**
 - (1) The network displayed on the schedule diagram shall depict the exact detail of the CPM schedule reports.
 - (2) The network diagram shall be of the precedence type and drawn by using early dates.
 - (3) The layout output shall be time-scaled. The length of the activity representation shall be proportional to the activity duration.
 - (4) The activity display shall include the:

- (a) Activity description.
- (b) Activity identification.
- (c) Activity original duration and remaining duration.
- (d) Activities coded by area, responsibility, and WBS.
- (e) Activity total float.
- (f) Activities early start dates.
- (g) Activities finish dates.
- (5) The activities, which are displayed on the network diagram, shall be grouped by WBS and sorted by area. The title of these components shall appear on the left-hand side of the plot.
- (6) The critical path shall be identified on the plot.
- (7) Vertical lines indicating the start and the end of each month shall be shown.
- (8) The data date shall be indicated on the plot in the activity display and in the title at the top or bottom of the plot.
- (9) Completed activities shall be indicated on the plot.
- (10) The Contract title shall be displayed on the plot.
- (11) A legend shall be provided which indicates the various symbols used and their meanings.
- (12) Milestone Activity shall be indicated by a prominent symbol.
- (13) Different line types shall indicate the critical path and completed Milestone and activities.
- g. Review and Approval.** The Engineer will review a submitted preliminary schedule for approval or rejection within five State Business Days of receipt and will thereafter return same to the party having submitted it. There will, in turn, be allotted ten State Business Days for review and approval or rejection by the Engineer of the submitted baseline schedule, which will thereafter be returned to the party having submitted it. The Engineer will review revised preliminary or revised baseline submittals within five State Business Days of receipt. The time periods set forth in this paragraph are provided for scheduling purposes only. The Department reserves the right to enlarge such time periods for review by a reasonable amount of time where circumstances necessitate, within the sole discretion of the Engineer.
- h. Updating and Revisions.**
 - (1) Within ten State Business Days after review by the Engineer, all preliminary and baseline schedules that are not approved shall be revised and resubmitted by the Contractor until the Engineer's approval is received.
 - (2) The Contractor shall update the CPM schedule monthly whether or not the Engineer has accepted the schedule, to reflect actual activity progress. The update shall include the historical record of actual start and actual finish dates for activities in progress, or completed, and the remaining duration based on the amount of workdays required to complete the activity.
 - (3) Monthly progress meetings shall be held. The updated CPM schedule shall be the basis for the monthly progress review meetings. Activity progress shall be prepared in advance of the meeting. At this meeting, attended by the Engineer, all progress during the calendar month shall be presented and reviewed for incorporation into the schedule by the Contractor. Within a period of ten State Business Days from the date of this progress meeting, the Contractor shall submit the schedule update to the Engineer with the agreed upon changes.
 - (4) The monthly schedule update submission shall consist of three copies of electronic format on floppy diskettes or compact disks and three copies of the following:
 - (a) Updated CPM schedule reports (see Item e. above).
 - (b) Layout output. (See item f. above)
 - (c) CPM progress narrative.

The CPM progress narrative report submitted as part of the update analysis shall include, but not be limited to, the:

 - 1. Description of schedule status.
 - 2. Discussion of current and anticipated delaying problem areas and their estimated impact.
 - 3. Schedule slippage, pay revisions, and/or progress along the critical path in terms of days ahead or behind the allowable dates, and if the Work is behind schedule, progress along other paths with negative float. This shall be in addition to and not a substitute for requirements in Subsection 108.11.
 - 4. Logic changes and an explanation of the revisions. Revisions to activities not worked on during the period, including changes in duration, or revisions to activity relationships are to be considered

logic revisions. Out-of-sequence activities are not acceptable and shall be corrected in logic revisions prior to submission to the Department.

- (5) When, in the Engineer's opinion, the CPM schedule fails to reflect the Contractor's actual plan and method of operation, or the Contractor's completion date as indicated by the CPM is more than one month behind the Contract completion date, the Engineer may require the Contractor to submit for review within ten State Business Days, a recovery plan for completion of the remaining work within the Contract completion date. A recovery plan shall include, but not be limited to, a revised CPM schedule and additional manpower and equipment that shall be utilized to complete the project by the date of Completion.
 - (6) When the Contractor adds activities that are not Extra Work Items to the CPM schedule, they shall be added in a method that completion dates of any succeeding baseline activities are not affected. All revisions shall be submitted to the Engineer for approval before incorporation into the CPM schedule.
 - (7) The Engineer shall have the right, within its sole discretion, to prepare its own update(s) or revision(s) to the baseline schedule in the event of a dispute between the parties regarding the appropriateness of the submitted revision(s) or updates to the baseline schedule or by reason of a failure on the part of the contractor to prepare same, which update(s) or revision(s) may reflect what the Engineer has determined to be the actual status of the project progress, actual sequencing of the Work and appropriate scheduling logic required under this Subsection. The Engineer may thereupon rely on its own revision(s) or update(s) of the baseline schedule in the administration of the project, review of claims and/or the imposition of liquidated damages.
- i. **Changes and Delays.** To ensure that the CPM schedule continues to accurately reflect the Contractor's plan for the Work and that it incorporates the impact of all changes and delays as soon as the Work scope can be defined, the Contractor shall use the following procedure to incorporate changes and delays.

When Extra Work or a change is proposed or claimed, the Contractor shall submit a Time Impact Evaluation form. Each Time Impact Evaluation must identify in a CPM fragnet sketch, additional work required as a result of the proposal and its interrelationship to the CPM schedule. Each change or delay shall be represented by adding a new activity or activities. These activities shall be clearly identified. This sketch shall show all activities, logic revisions, duration changes, and new activities with all the predecessors and successors. The Time Impact Evaluation form shall also include any associated cost changes for performing the Work in question. Upon the Engineer's approval of the Time Impact Evaluation, the Contractor shall incorporate the fragnet's illustrating the influence of changes and delays into the baseline schedule and the working schedule in the next schedule update. An extension of time may only be considered when the Time Impacted scheduled completion date exceeds the date of Completion. For cases where the Contractor is behind schedule, an extension will be granted for only the amount of time that the Department is responsible as supported by a Time Impact Evaluation. In the event of a dispute, the Engineer may prepare an update, which is believed to be the true impact on the project. No additional compensation will be paid to the Contractor for preparing these revisions. Any request for extension of time shall be verified by CPM analysis and shall be in accordance with Subsection 108.11. Compensation for additional expense to the Contractor and allowance of additional time for completion of the Work shall be as set forth in a Construction Order in accordance with Subsections 108.11 and 109.03.

2. **Staging.** The Contractor shall schedule the Work using such procedures and staging as may be specified in the Contract Documents. Work designated as part of separate stages may be performed simultaneously where provided by the Contract Documents or where approved.

When the Contract Documents provide for staging or specific procedures, the Contractor may present, for written approval of the Engineer, a detailed, written alternate staging plan or procedure which incorporates the requirements of the Department. If the Contractor proposes an alternate-staging plan, two CPM schedules shall be submitted. One based on the original staging and one based on the Contractor's alternate staging. As a condition of the Engineer's reviewing of the alternate staging plan or procedure, the Contractor agrees that it is not entitled to additional Contract Time or compensation arising from possible delays to construction due to the time spent in reviewing the Contractor's staging plan or procedure, regardless of whether the Department accepts or rejects it. The Engineer will review and approve or reject and or return, with comments, the staging plan within ten State Business Days. If such staging plan or alternate procedure is approved in writing, the Contractor shall then finalize the progress schedule consistent with the alternate approved staging.

3. Prosecution of the Work.

- a. At or prior to the preconstruction conference, the Contractor shall furnish the name and location of the solid waste facilities to be utilized as well as the fee structure of each of the facilities. Failure to provide such information shall make the Contractor ineligible for adjusted compensation as provided for in Subsection 104.07.
- b. The Contractor shall provide sufficient materials, equipment, and labor to guarantee the Completion of the Project in accordance with the Contract Documents and within the time set forth under Subsection 108.10.
- c. The Contractor shall supply the Engineer with a weekly work schedule indicating the Contractor's planned work, the subcontractor's planned work, the dates when materials and submissions are to be delivered, and a forecast of lane closings.
- d. The Contractor shall notify the Engineer, in writing, prior to discontinuing work for any reason and at least 24 hours in advance of resuming operations.
- e. The Contractor shall arrange and prosecute the Work so that each successive construction operation at each location shall follow the preceding operation as closely as the requirements of the various types of construction permit.
- f. Underground structures for traffic signals, except for pressure detector installations shall be constructed prior to completion of the intersecting road.
- g. Work which closes or alters the use of existing roadways shall not be undertaken until adequate provisions, conforming to the requirements of Section 617, have been made by the Contractor and approved.
- h. The Engineer may revise stage construction and maintenance of traffic, if deemed necessary, by the Engineer due to unforeseen circumstances that may arise during construction.
- i. When possible, the construction of subsurface structures adjacent to traffic shall be performed while traffic is being diverted from such areas. If traffic must be maintained in such areas, the Work shall be done expeditiously in stages, as approved, and with minimum interference with traffic.
- j. Subsurface structure excavation adjacent to traffic shall not remain open overnight unless adequately protected by approved safety devices.
- k. The Contractor shall proceed with the Work of demolition of the various buildings that are identified with a demolition number as and when they become available for demolition. If any of the buildings to be demolished is not available for demolition at the time the Contractor begins work on the Project, the Contractor shall temporarily defer its work in the vicinity of the building and complete the Work when the building is made available for demolition.
- l. Operations adjacent to traffic shall be confined to only one side of the traffic at any one time unless otherwise specified in the Contract Documents.
- m. Concrete curbs constructed adjacent to flexible base and surface courses shall be completed, cured, and backfilled before the flexible base and surface courses are constructed.
- n. Bituminous paving operations shall be staged to progress up to the bottom of the surface course. The top layer of the bituminous concrete surface course for the full width of the traveled way, shoulder, and auxiliary lanes shall be paved as a single stage of construction and as the final paving operation.

4. Acceleration and Default. If, in the opinion of the Engineer, the Contractor falls behind its baseline schedule, and cannot complete the Work within the time prescribed under Subsection 108.10, as modified pursuant to Subsection 108.11, the Contractor shall take such steps as may be necessary to improve its progress. The Engineer may require the Contractor to increase the number of shifts, begin overtime operations, work extra days including weekends and holidays, or supplement its construction plant and to submit for approval such supplementary schedule or schedules, as may be deemed necessary to demonstrate the manner in which the agreed rate of progress shall be regained, all at no cost to the State.

Failure of the Contractor to comply with the requirements of the Engineer under this Subheading is grounds for the determination that the Contractor is not prosecuting the Work with such diligence as to ensure Completion within the time specified. Upon such determination, the Engineer may terminate the Contractor's right to proceed with the Work or any separate part thereof in accordance with Subsection 108.17.

5. Intent, Responsibility, and Time. Scheduling of construction shall be the responsibility of the Contractor. The Contractor shall determine the most feasible order of work commensurate with the Contractor's abilities and the Contract Documents. The CPM schedule will be used for determining extensions or reductions of Contract Time pursuant to Subsection 108.11.

It is not intended that the Engineer, by approving the CPM schedule, agrees that it is reasonable in any or all respects or that following the CPM schedule can result in timely completion of the Project. The progress schedule is not a part of the Contract.

If, in the preparation of the CPM schedule, the Contractor reflects a completion date different than that specified under Subsection 108.10, this in no way voids the date set therein. The date as specified in that Subsection governs. Where the CPM schedule reflects a completion date earlier than that specified as the Contract Time, the Engineer may approve such schedule with the Contractor specifically understanding that no claim for additional Contract Time or compensation shall be brought against the State as the result of failure to complete the Work by the earlier date shown on the CPM schedule.

6. **Payment.** Payment for the accepted progress schedule will be made on a lump sum basis for the costs for schedule preparation, maintenance, updating, facilities, personnel, computer hardware and software requirements, schedule submittals and reproduction as specified. Twenty-five percent of the lump sum bid will be paid upon approval of the baseline submission, and the balance paid on approval of updates at a prorated sum based upon the number of anticipated updates to be submitted during the Contract Time.

Payment will be made under:

Pay Item
PROGRESS SCHEDULE

Pay Unit
LUMP SUM

108.05 Mobilization.

THIS SUBSECTION IS CHANGED TO:

Mobilization shall consist of the preparatory work and operations necessary for the movement of personnel, equipment, supplies, and incidentals to the Project site, and other work performed or costs incurred prior to beginning Work.

Payment for mobilization will be made on a lump sum basis regardless of the fact that the Contractor may have, for any reason, shut down its work on the Project or moved equipment away from the Project and back again.

Payment will be made in accordance with the following schedule:

1. When five percent of the Work is completed and the Baseline Progress Schedule is approved by the Engineer, 25 percent of the lump sum bid for mobilization or 2.5 percent of the Total Contract Price, whichever is less, will be paid.
2. When ten percent of the Work is completed and all required CPM Progress Schedule Updates are approved by the Engineer, 50 percent of the lump sum bid for mobilization or five percent of the Total Contract Price, whichever is less, will be paid.
3. When 15 percent of the Work is completed and all required CPM Progress Schedule Updates are approved by the Engineer, 75 percent of the lump sum bid for mobilization or 7.5 percent of the Total Contract Price, whichever is less, will be paid.
4. When 20 percent of the Work is completed and all required CPM Progress Schedule Updates are approved by the Engineer, 100 percent of the lump sum bid for mobilization or ten percent of the Total Contract Price, whichever is less, will be paid.
5. When all Work on the Project is complete, payment for the lump sum bid for mobilization in excess of ten percent of the Total Contract Price will be made.
6. The percentage of Work completed shall be the total of payments earned compared to the Total Contract Price. The total of payments earned excludes the amount paid for this item and the amount paid for materials furnished but not incorporated into the Work in accordance with Subsection 109.06, as shown on the monthly estimates of the approximate quantities of Work performed, prepared in accordance with Subsection 109.05.
7. No payment will be made for mobilization until a Baseline Schedule is approved, except when all Work on the Project is complete, then 50 percent of the lump sum bid for mobilization will be paid and no further payment(s) will be made for the lump sum bid for mobilization.

Payment will be made under:

Pay Item
MOBILIZATION

Pay Unit
LUMP SUM

When mobilization is not a Pay Item, all costs for the Work shall be included in the prices bid for various Pay Items scheduled in the Proposal.

108.10 Time of Completion.

- A. All work required for Substantial Completion of the Project shall be completed on or before December 11, 2006.
- B. The entire Work of the Project shall be completed on or before February 9, 2007.

108.11 Extensions and Reductions of Contract Time.

THIS SUBSECTION IS CHANGED TO:

- A. **Basis for Extension.** Where appropriate under the provisions of this Subsection, extensions or reductions to the Contract Time may be provided by Construction Order, however, such extensions or reductions will be allowed only to the extent that the increase or decrease in the Work or delays of the types indicated below affect current controlling operations and the overall Completion. Increases or decreases in Work or such delays, which do not affect the overall Completion, are not to be the basis for reduction or extension of Contract Time. Extensions of Contract Time will not be granted under this Subsection where it is determined that the Contractor could have avoided the circumstances which caused the request for extension.

If the Contractor is delayed in completion of the Work by reason of changes made under Subsection 104.02, or by failure of the Department to acquire right-of-way, or by any act of other contractors consistent with Subsection 105.10, or due to the discovery of archeological finds consistent with Subsection 108.13, or the discovery of hazardous substances, or by any act of the Engineer or of the Department not contemplated by the Contract, an extension of Contract Time commensurate with the delay in overall completion of the Contract thus caused will be granted, and the Contractor is relieved from any claim for liquidated damages or engineering and inspection charges.

Additionally, the Contractor may be granted an extension of Contract Time and not be assessed liquidated damages or the costs of engineering and inspection for any portion of the delay in overall completion of the Work beyond the time provided in Subsection 108.10 caused by the following reasons:

1. acts of civil or military authorities, war, or riot;
 2. fire;
 3. floods, tidal waves, earthquakes, cyclones, tornadoes, hurricanes, or other cataclysmic natural phenomenon (except on working day contracts);
 4. extreme weather conditions (see Item 1 of the fourth paragraph) (except on working day contracts);
 5. epidemics or quarantine restrictions;
 6. strikes or labor disputes beyond the control of the Contractor which prevent work on the construction operations which are critical to the completion of the Project;
 7. shortages of materials (see Item 2 of the fourth paragraph) or freight embargoes;
 8. acts of the State in its sovereign capacity;
 9. failure of the Engineer to furnish interpretations of the Contract Documents (see Item 3 of the fourth paragraph).
- B. **Criteria for Evaluation.** Extension of Contract Time for the reasons set forth in this Subsection will not be granted unless the Contractor has notified the Engineer in writing of the causes of delay within 15 State Business Days from the beginning of any such delay on forms provided by the Department. The Engineer will evaluate the facts and the extent of the delay, and the Engineer's findings will be final and conclusive and will be based on the following:
 1. Extensions of Contract Time for extreme weather conditions will be granted in accordance with the following:

Number of Days the Contractor's Work is Limited to in One Month as the Result of Extreme Weather Conditions (April through November inclusive)	Extension of Contract Time Allowable
16 - 31	0
15	1
14	2
13	3
12	4
11	5
10	6
9	7
8	8
7	9
6	10
5	11
4	12
3	13
2	14
1	15
0	16

Extensions of Contract Time for extreme weather conditions will be granted in accordance with the following for the months of December through March inclusive:

It is anticipated that the average number of total Working Days during this four month winter period is 20 for road work (Exclusive of temperature sensitive work, for example but not limited to, paving operations, earthwork, aggregates, curb and sidewalk, etc.) and 40 for bridge work (Exclusive of temperature sensitive work, for example but not limited to, concrete decks, parapets, bridge repairs, bridge painting, etc.)

In using the above, the Engineer will:

- a. Consider days for which an extension is granted under the above category "floods, tidal waves, earthquakes, cyclones, tornadoes, hurricanes, or other cataclysmic natural phenomenon" as days on which the Contractor's work is limited as the result of these extreme weather conditions;
 - b. Consider days for which an extension is granted under the above categories for causes other than "floods, tidal waves, earthquakes, cyclones, tornadoes, hurricanes, or other cataclysmic natural phenomenon" as days on which the Contractor worked and was unaffected by extreme weather conditions; and
 - c. Make the above calculation based on the full number of days in the calendar month as being days on which the Contractor could have worked without regard to Saturdays, Sundays, and holidays.
 - d. Extension of time for extreme weather conditions will only be granted when the Critical Path of the Progress Schedule is affected and documented by the contractor in accordance with Subsection 108.04. No extension of time will be granted unless the Contractor submits daily documentation of such extreme weather.
2. Extensions of Contract Time will not be granted for a delay caused by a shortage of materials unless the Contractor furnishes:
- a. Documentary proof that it has diligently made every effort to obtain such materials from all known sources within reasonable distance from the Work, and
 - b. Further proof in the form of a progress schedule, as required in Subsection 108.04, showing that the inability to obtain such materials when originally planned, did, in fact, delayed the date of Completion which could not be compensated for by revising the sequence of the Contractor's operations. The term "shortage of materials" applies only to raw and fabricated materials, articles, parts, or equipment which are standard items and does not apply to materials, parts, articles, or equipment which are processed, made, constructed, fabricated, or

manufactured to meet the specific requirements of the Contract. Only the physical shortage of materials and not the cost of materials will be considered.

3. Extensions of Contract Time will not be granted for failure of the Engineer to furnish interpretations of the Contract Documents until 20 State Business Days after receipt of such demand in writing as required by Subsections 105.01 and 105.07, and not then unless such request for an interpretation of the Contract Documents is reasonable and made in good faith, and the failure to respond was unwarranted.
4. It is understood and agreed that the Contractor has considered in its bid all of the permanent and temporary utility facilities in their present or relocated positions as may be shown on Plans, as described in Specifications and as revealed by its site investigation; is aware that utility company service demands, adverse field conditions and emergencies may affect the owner's ability to comply with the proposed schedules for utility work; and is cognizant of the limited ability of the State to control the actions of the utility companies, including the actions of railroads, and has made allowances in its bid. Extensions of Contract Time will be granted for extreme weather and exigent circumstances only, as specifically set forth above and which are outside the control of the respective utility company(ies) or the Contractor as determined by the Engineer utilizing the Extreme Weather provisions specified in 1. above. Extension of time for utility work will only be granted when the Critical Path of the Progress Schedule is affected and documented by the Contractor in accordance with Subsection 108.04.

Except where specifically provided in the Contract Documents, the Contractor shall not make any claim for damages or additional compensation for any delay in or hindrance to the performance of the Contract occasioned by any act or omission to act by the State or any of its representatives, or for any of the reasons enumerated in this Subsection and agrees that any such claim shall be fully compensated for by an extension of Contract Time to complete performance of the Work.

Extensions of Contract Time will not be granted due to delays caused by, or in any way related to, the financial condition of the Contractor, subcontractors, sub-subcontractors, material, men, fabricators, or suppliers. The Contractor and its surety assume full responsibility for ensuring that the financial condition of any of the above does not delay completion of the Contract.

If, as a result of modifications made under Subsection 104.02, 104.05, 104.06, or 108.09, the Work required is reduced or altered so that the time required for Completion is reduced, the Engineer may reduce the Contract Time provided under Subsection 108.10. The Engineer will evaluate the facts and the extent of the reduction. The Engineer's findings thereon will be final and conclusive.

It is the intention of the above provisions that the Contractor or surety is not relieved of liability for liquidated damages or engineering and inspection charges for any period of delay in Completion in excess of that expressly provided for in this Subsection.

108.12 Right-Of-Way Delays.

THE TITLE OF THIS SUBSECTION IS CHANGED TO:

108.12 Right-Of-Way Information and Delays.

108.12 Right-Of-Way Information and Delays.

THE FOLLOWING IS ADDED:

The Contractor shall obtain from the Engineer all information regarding ROW Parcels and Easements acquired for the Project as well as the nature and type of title acquired. The Contractor shall make periodic requests for updates to this information during the course of the Contract.

The Contractor shall not enter an Easement until the Resident Engineer provides written notice to the property owner. The Contractor shall provide written notice to the Resident Engineer, 30 calendar days prior to entering a particular Easement or right, which is lesser than a fee interest. The Contractor shall make no claim for delays by reason that entry upon an Easement or right which is lesser than a fee interest is conditioned upon notice or is limited in duration; the Contractor is required to schedule accordingly and take such limitations into account when planning performance of the Work.

Temporary Easements and/or temporary construction rights will in most cases contain a limitation as to the length of time that they are extant. The Contractor shall schedule the Work pursuant to Subsection 108.04 so as to accommodate the particular time limitations of an Easement or right which is lesser than a fee interest as reflected on the R.O.W. plans. The Contractor shall provide a written request to the Engineer that the Department procure an extension from the owner of a particular temporary easement or right, which is lesser than a fee simple interest, so as to enable the

Contractor to continue occupancy of or re-enter same in the future, beyond the initial time period set forth in the respective property description prior to the expiration thereof.

Where the Contractor fails to complete the work within an area of a temporary easement or right lesser than a fee interest during the time allowed under the property description, by reason of the Contractor's own fault; the Contractor shall reimburse the State for the sum payable to the owner of the underlying fee interest for the extended period of occupancy use. The Resident Engineer may deduct an amount equal to such payments from the monthly estimate of the Work performed after providing 30 day written notice to the Contractor of such action, including a breakdown of the costs sought or to be sought by reason of the delay in timely vacating a temporary easement or right lesser than a fee interest.

108.16 Failure to Complete on Time.

LIQUIDATED DAMAGES SHALL BE AS FOLLOWS:

1. For each Calendar Day that the Contractor fails to complete Construction Operations, as specified in Item A of Subsection 108.10 of these Special Provisions, for Substantial Completion, the Contractor shall pay liquidated damages consisting of Road User Costs and Construction Engineering Costs, as defined in Subsection 101.03, to the State in the amount of \$8,500.
2. For each Calendar Day that the Contractor fails to complete the entire Work of the Project as specified in Item B of Subsection 108.10 of these Special Provisions, for Completion, the Contractor shall pay liquidated damages consisting of Construction Engineering Costs, as defined in Subsection 101.03, to the State in the amount of \$4,200, provided that Construction Operations as specified for Substantial Completion are actually completed.

The days in default set forth above are the number of Calendar Days in default when the time for Completion is specified on the basis of Calendar Days or a specified completion date, and are the number of Working Days in default when the time for Completion is specified on the basis of Working Days.

Anytime after the Engineer notifies the Contractor in writing, that Substantial Completion of the Project has been actually achieved, the Commissioner may elect, to waive the imposition of liquidated damages under paragraph number 2 above and, in lieu thereof, require the Contractor to pay the actual costs incurred by the State for engineering, inspection, and administration (including overhead) between the actual date of Substantial Completion or such subsequent date as the Commissioner may determine and the actual date of Completion of all Work, as established by the Certificate of Completion. The Contractor hereby waives the right to challenge this election by the Commissioner on the grounds that such costs exceed the amount of liquidated damages specified in Subsection 108.16, Subpart 2.

The Commissioner will recover all damages specified above by deducting the amount thereof from any monies due or that may become due the Contractor, or from the Contractor or from its surety.

108.19 Lane Occupancy Charges.

THE FOLLOWING IS ADDED:

The rate or rates to be applied in the calculation of a Lane Occupancy Charge shall be in accordance with the following:

<u>Description</u>	<u>Rate per Minute per Lane</u>
Overrun of "Two Lanes Maintained" Time Limits	\$20/minute/lane
Overrun of "One Lane Maintained" Time Limits	\$100/minute/lane
Overrun of "Ramp Closure" Time Limits	\$10/minute/lane

SECTION 109 – MEASUREMENT AND PAYMENT

109.03 Force Account Payment.

5. **Profit.** Profit shall be computed at ten percent of the following:

SUBPART C. IS ADDED AS FOLLOWS:

c. Total fringe benefits on total direct labor cost as computed above.

6. **Overhead.**

THE FIRST SENTENCE IS CHANGED TO:

Any and all overhead for the Contractor is defined to include the following:

THE FIRST SENTENCE OF THE SECOND PARAGRAPH IS CHANGED TO:

Any and all overhead costs of the Contractor for Force Account work shall be computed at 15 percent of the following:

109.07 Payment Following Substantial Completion.

SUBPART 1 OF THE FIRST PARAGRAPH IS CHANGED TO:

1. Each subcontractor or supplier has been promptly paid any amount due from any previous progress payment and shall be paid any amount due from the current progress payment, including all retainage withheld from the subcontractor or supplier, within 14 days of the receipt by the Contractor of payment from the Department; or

DIVISION 200 - EARTHWORK

SECTION 201 - CLEARING SITE

201.01 Description.

THE FOLLOWING IS ADDED:

This work shall also include hand removal of debris in Great Notch Brook, from Browertown Road to a point 50 meters upstream of the Proposed Browertown Road baseline.

This work shall also include cutting and repairing the existing driveway retaining wall at Browertown Road Baseline Station 9+815 Right.

This work shall also include removal of privately owned signs, lighted and not lighted, where called out on the plans.

201.03 Clearing Site.

THE FOLLOWING IS ADDED:

The Contractor shall conduct all clearing and removal activities in accordance with the Site Specific Health and Safety Plan (HASP) in Subsection 202.04 and 202.13. The Contractor shall institute controls to minimize contact with materials containing regulated waste and regulated waste, hazardous, as defined elsewhere in the Special Provisions and Specifications during clearing and removal activities. Site clearing shall not be initiated until the Contractor's Site Specific HASP has been reviewed and accepted by the Engineer.

Additional work to be performed Under Clearing Site shall conform to the following:

1. **Debris Removal, Great Notch Brook.** All debris within the 12.7 meter wide drainage easement shall be removed by hand and disposed of in accordance with Subsection 201.10. Vehicles or machinery will not be permitted within the Drainage Easement acquired for this work. Debris that shall be removed includes branches, wood building materials, windows and doors, paint cans, and corrugated metal. Concrete curbing in the stream bed shall not be removed. The contractor shall remove debris once during the project, after the Browertown Road culvert and Retaining Wall No. 7 are completed.
2. **Cutting and Repairing Driveway Wall.** The existing brick retaining wall along the driveway at Browertown Road Baseline Station 9+815 Right shall be cut at the location shown on the plans. The length of wall marked for removal shall be removed to a depth of 200 millimeters below finished grade. The materials removed shall be neatly stacked at a location chosen by the property owner within the subject parcel. If the property owner refuses to accept any or all of the retaining wall materials, they shall become the property of the owner. A single width brick fascia shall be constructed on the cut end of the retaining wall, using brick salvaged from the removed section of wall. The fascia shall cover the entire width of the wall, and shall be tied to the wall with one masonry anchor at each course.
3. **Removal of Privately Owned Signs.** Lighted and unlighted privately owned signs shall be removed where called for on the plans.

201.04 Removal of Bridges, Culverts, and Other Structures.

THE FOLLOWING IS ADDED:

The bridge work to be performed under this Contract includes the removal and disposal of the existing Route 46 Bridge over Browertown Road (Structure No. 1606-163) in its entirety including all footings in stages to the limits shown on the plans. The existing bridge is a single-span structure. The superstructure consists of concrete encased I-beams and is supported on concrete abutments. The existing bridge to be removed will not be salvaged for the Department. Removal of the existing Browertown Road culvert over Great Notch Brook (Structure No. 1606-184) in stages, the existing Route 46 culvert over Great Notch Brook (Structure No. 1606-162) in stages, and the Rose Street culvert over Great Notch Brook (Structure No. 1606-185) is also included.

THE FOLLOWING IS ADDED:

Special protective systems for the removal of bridges, culverts, and other structures shall be as follows:

1. **Temporary Shielding.** Temporary shielding for demolition and new construction shall include furnishing, installing, and removing a structural framing and barrier system. The system shall be supported from girders to provide an adequate and substantial temporary shielding system to protect vehicular, pedestrian, and railroad traffic from falling construction materials or other objects. The barrier system shall remain in place during the time that construction work is performed and until the work is completed and accepted.

For deck replacement or new deck work, the temporary shielding shall seal the underside of deck and extend outside of the fascia stringers to enclose the soffits and parapets.

For parapet removal and replacement or new parapet construction, an outrigging type of temporary shielding, which encloses the soffit and parapet, shall be used.

The Contractor shall submit for approval detailed working drawings showing all elements of the temporary shielding system, including bonding and grounding over electrified rail lines, design calculations, and the sequence of operations thereof, signed and sealed by a Professional Engineer licensed in the State. Should the Contractor's operation or construction staging require it to install and remove the shielding more than once, no additional payment will be made.

The traffic lanes and pedestrian areas below the areas where temporary shielding is being installed shall be closed, in accordance with the requirements of Section 617.

The temporary shielding shall be designed to withstand a load of at least 5.75 kilopascals or greater if heavier loads are anticipated and shall prevent small particles and dust from falling through.

Bolted connections or welding between temporary shielding and bottom flanges of the beams shall not be permitted. Any materials dropped on the temporary shielding shall not be allowed to accumulate and shall be removed promptly.

The selection of sizes, materials, their arrangements, and details shall be the Contractor's option and responsibility, but subject to approval by the Engineer.

In no case shall the temporary shielding reduce the existing underclearances of the bridges to less than 4.5 meters over roadways and 6.75 meters over railroads. If any existing underclearance is less than these values, it shall be maintained without any further reduction.

The Contractor shall obtain the Engineer's approval of the method, design, and details of the temporary shielding system that the Contractor intends to use for the protection of traffic. No construction work shall be performed above traffic before such approval.

201.08 Sealing of Abandoned Wells.

THE FOLLOWING IS ADDED:

Monitoring wells identified by the Engineer shall be abandoned and sealed in accordance with N.J.A.C. 7:9-9.1 *et seq.* A copy of well abandonment records shall be submitted to the Engineer at the same time as and in addition to submitting the original record to the NJDEP.

201.09 Demolition of Buildings.

4. Demolition Operations

THE FOLLOWING IS ADDED BEFORE THE FIRST PARAGRAPH

Prior to start of demolition operations, the Contractor shall remove and properly dispose of all chemicals, miscellaneous cylinders, drums and garbage from the buildings.

5. Backfilling.

THE FIRST ITEM OF THE FIRST PARAGRAPH IS DELETED.

201.12 Basis of Payment.

THE SECOND PARAGRAPH IS CHANGED TO:

Payment for the Pay Item "Clearing Site" in excess of \$215,000 will not be made until Completion.

The sequence of construction required removal of 30 percent of the bridge (STRUCTURE 1606-163, Route US 46 over Browertown Road) in Stage II, 35 percent in Stage III, and 35 percent in Stage IV. The payment schedule for "CLEARING SITE, BRIDGE (STRUCTURE NO. 1606-163, Route US 46 over Browertown Road) shall be as follows:

- 30 percent of the price bid (or \$90,000, whichever is less) upon acceptance of Stage II Demolition.
- 35 percent of the price bid (or \$105,000, whichever is less) upon acceptance of Stage III Demolition.
- 35 percent of the price bid (or \$105,000, whichever is less) upon acceptance of Stage IV Demolition.

The sequence of construction required removal of the culvert (STRUCTURE NO. 1606-184, Browertown Road Culvert over Great Notch Brook) in two stages. The payment schedule for "CLEARING SITE, STRUCTURE (STRUCTURE NO. 1606-184, Browertown Road Culvert over Great Notch Brook) shall be as follows:

- 50 percent of the price bid (or \$17,500, whichever is less) upon acceptance of Stage I Demolition.
- 50 percent of the price bid (or \$17,500, whichever is less) upon acceptance of Stage II Demolition.

The sequence of construction required removal of 30 percent of the culvert (STRUCTURE 1606-162, Route US 46 over Great Notch Brook) in Stage II, 35 percent in Stage III, and 35 percent in Stage IV. The payment schedule for "CLEARING SITE, STRUCTURE (STRUCTURE NO. 1606-162, Route US 46 over Great Notch Brook) shall be as follows:

- 30 percent of the price bid (or \$15,000, whichever is less) upon acceptance of Stage II Demolition.
- 35 percent of the price bid (or \$17,500, whichever is less) upon acceptance of Stage III Demolition.
- 35 percent of the price bid (or \$17,500, whichever is less) upon acceptance of Stage IV Demolition.

The sequence of construction required removal of 100 percent of the culvert (STRUCTURE NO. 1606-185, Rose Street Over Great Notch Brook) in one stage. The payment schedule for "CLEARING SITE, STRUCTURE (STRUCTURE NO. 1606-185, Rose Street over Great Notch Brook) shall be as follows:

- 100 percent of the price bid (or \$30,000, whichever is less) upon acceptance of Stage I Demolition.

THE FOLLOWING IS ADDED AFTER THE THIRD PARAGRAPH:

Payment for the Pay Item "Clearing Site, Bridge (Structure No. 1606-163)" in excess of \$300,000.00 will not be made until Substantial Completion.

Payment for the Pay Item "Clearing Site, Structure (Structure No. 1606-162)" in excess of \$50,000.00 will not be made until Substantial Completion.

Payment for the Pay Item "Clearing Site, Structure (Structure No. 1606-184)" in excess of \$35,000.00 will not be made until Substantial Completion.

Payment for the Pay Item "Clearing Site, Structure (Structure No. 1606-185)" in excess of \$30,000.00 will not be made until Substantial Completion.

Separate payment will not be made for disposal of all contents of buildings demolished, including such items as containers of chemicals and adhesives, cylinders, drums, storage tanks in buildings, and garbage.

Separate payment will not be made for removal of trees.

Separate payment will not be made for removal and disposal of debris in Great Notch Brook.

Separate payment will not be made for cutting and repairing the driveway retaining wall at Browertown Road Baseline Station 9+815 Right.

Separate payment will not be made for removal of privately owned signs, including lighted signs.

SECTION 202 - ROADWAY EXCAVATION

202.01 Description.

THE FOLLOWING IS ADDED:

This work shall include the excavation, handling, stockpiling, disposal and/or recycling of Regulated Waste generated in excavation for roadway, foundations, utilities and subsurface structures.

This work shall also include the excavation, handling, and disposal of Regulated Waste, Hazardous, at the location shown on the plans.

202.02 Classification.

D. Roadway Excavation, Regulated Waste. Based on the preliminary analysis the NJDEP classification of regulated waste is ID-27, non-hazardous contaminated soil, sediment and debris.

THE FOLLOWING IS ADDED:

H. Roadway Excavation, Regulated Waste, Hazardous. Based on the preliminary analysis the regulated waste, hazardous is USEPA Waste No. D008, lead.

202.04 Excavation.

THE LAST PARAGRAPH IS CHANGED TO:

All unstable material shall be disposed of in accordance with Subsection 202.12 and 202.13

THE FOLLOWING IS ADDED:

MANAGEMENT OF REGULATED WASTE AND REGULATED WASTE, HAZARDOUS

Preliminary analysis has identified areas of contaminated soil within and adjacent to planned excavation areas. Excavation in areas containing one or more contaminants exceeding New Jersey Department of Environmental Protection (NJDEP) soil cleanup criteria, as identified in the construction documents, as directed by the Engineer, or as determined by the Contractor and approved by the Engineer, shall be performed in accordance with applicable Federal and State law, rules and regulations; The Contractor's Site Specific Health and Safety Plan (HASP); the specifications and the direction of the Engineer.

A. REQUIREMENTS AND METHODS FOR EXCAVATION AND MANAGEMENT OF REGULATED WASTE

Description.

The work shall include the excavation, handling, stockpiling, on-site transport, sampling and analysis for disposal, reuse on-site and disposal, recycling or treatment of regulated waste except as provided for in Subsection 202.13. The disposal of regulated waste shall comply with the plan, specifications, Federal, State and local law, rules, and regulations, the waste management plan of the district of origin, and Subsection 202.13.

The term 'Regulated Waste' as used hereinafter shall mean Regulated Waste and Regulated Waste, Hazardous as appropriate.

Construction Requirements.

The Contractor shall provide all personnel, materials and equipment needed to undertake excavation as required to complete the work in a safe manner that is protective of human health and the environment. Excavation of regulated waste shall be performed with equipment of suitable size and compatible with site conditions. All equipment shall comply with and shall be operated in accordance with all applicable regulations. Excavation of Regulated Waste shall be to the limits shown on the plans and no further, unless directed by the Engineer.

The Contractor shall handle all excavated material in a manner that protects site personnel, the public, and the environment in accordance with all applicable federal, state, and local laws and regulations. Prior to any excavation of

regulated waste the Contractor shall develop a Site-Specific Health and Safety Plan (HASP) in accordance with 29 CFR 1910, 29 CFR 1926 and the Site Specific Health and Safety Requirements specified herein.

Environmental Sampling and Testing.

The Contractor shall provide all personnel, materials and equipment needed to properly characterize excavated Regulated Waste material as required for disposal/recycling facility approval. The Contractor shall submit as part of the Material Handling Plan described herein, a sampling analysis section for characterizing the Regulated Waste for off-site disposal in accordance with applicable Federal, State and Local laws, rules and regulations: or according to the disposal facility accepting the waste.

The Contractor shall submit as part of the sampling and analysis section, the name, address and telephone number of the contact for the Contractor's proposed environmental laboratory and the name and experience of the proposed environmental sampling technician. The use of a proposed environmental laboratory and proposed environmental sampling technician are subject to review and acceptance by the Engineer.

The Contractor shall provide all personnel, equipment and ancillary services required to collect, transport and analyze environmental samples required for proper characterization of the material. All sampling, testing and inspections conducted in areas containing potential regulated waste shall be performed in accordance with the site-specific HASP in Subsection 202.04.

All sampling, testing and data management procedures shall comply with current versions of the NJDEP Field Sampling Procedures Manual, NJDEP Technical Requirements for Site Remediation, NJDEP Management of Excavated Soils Guidelines, and Appendix 1 and the NJDEP Waste Classification Form.

Where required by the Contractor's disposal facility, the Contractor shall collect and analyze for additional parameters necessary for off-site disposal.

The contractor shall not sample, test or analyze for the purpose of redefining the limits or designation of the regulated excavation.

Stockpiling Regulated Waste.

The Contractor shall provide all personnel, materials and equipment needed to properly store (and dewater, if necessary) Regulated Waste in temporary stockpiles. If needed, any temporary stockpile(s) shall be located at area(s) within the project limits selected by the Contractor and approved by the Resident Engineer. Regulated waste shall not be stockpiled for more than 180 days. Regulated waste subsequently classified as hazardous shall be properly stockpiled and removed within 30 days of excavation.

Regulated Waste, Hazardous, delineated on the plans for removal shall not be stockpiled on site, but shall be immediately transported to the Contractor's disposal facility upon excavation.

Stockpiles shall only be placed on dry areas on a layer of minimum 10mils thick PVC sheeting or similar, as approved by the Engineer and contained with hay bales or silt fence placed continuously at the perimeter of the stockpile(s). All joints in the underlying PVC sheeting shall overlap with a minimum of 300 millimeters at the ends. Stockpile shall be constructed so that heights shall not exceed 4.5 meters, nor with sideslopes steeper than one vertical and two horizontal. The Contractor shall segregate material of differing types and degrees of contamination so as to prevent cross-contamination of uncontaminated material.

The Contractor shall provide protection for the regulated waste stockpile to prevent the run-on of stormwater, migration of contaminants, dusting, erosion and unauthorized contact. Stockpiles shall be covered with PVC sheeting of the same thickness. The sheeting shall be secured in place with tie downs and/or heavy objects such as concrete blocks at the end of each workday and during adverse weather conditions. All joints in the cover shall have a minimum 300 millimeters overlap and securing materials shall be placed along the joints such that the cover will not be opened by wind action.

The Contractor shall be responsible for the proper protection and maintenance for the regulated waste stockpile and embankment until completion of the work and acceptance by the Engineer. The Contractor shall maintain the sheeting

as needed to repair damage and replace displaced cover sheeting. At the direction of the Engineer, the Contractor shall remedy any observed deficiencies in the cover and sediment barrier surrounding the temporary stockpile or embankment as soon as practicable, including but not limited to the removal and disposal of accumulated sediments behind the sediment barrier, to maintain satisfactory protection, and as otherwise needed to prevent contamination migration or exposure.

Drainage shall be controlled with hay bales, placed continuously at the perimeter of the stockpile(s), PVC cover and silt fence such that run-on and run-off from the regulated waste stockpile(s) is mitigated. Decant from the dewatering of sediments shall be in accordance with the Pollution Prevention and Control Plan (described herein Subsection 212.06).

Soil/Sediment Usage Tracking Log.

The Contractor shall monitor and record on Daily Soil/Sediment Tracking Logs the source location, type, quantity, and characteristics of Regulated Waste excavated, stockpiled, and. Transported. The Contractor shall submit a Daily Soil/Sediment Tracking Log to the Engineer for each workday involving excavation, stockpiling, transport and disposal of regulated waste. The Daily Soil Tracking Log shall contain, at a minimum, the following information:

- A) Date,
 - B) Location(s) of excavation and placement of material,
 - C) Volume of regulated waste removed, and
- Name(s) and signature(s) of the Contractor representative(s) responsible for preparing and executing the Usage Tracking Log.

Copies of Daily Soil/Sediment Tracking Logs shall be submitted to the Engineer on a weekly basis. The Engineer will not approve any progress payment invoice if the required Daily Soil/Sediment Tracking logs have not been submitted.

B. SITE-SPECIFIC HEALTH AND SAFETY REQUIREMENTS

Background Environmental Information.

The documentation and environmental information provided by the NJDOT is for information purposes only. The Contractor is responsible for appropriate interpretation of the information. The Contractor shall perform a hazard assessment of each proposed work task and make an independent evaluation regarding the appropriate level of health and safety requirements.

Description.

This work shall consist of the Contractor preparing, submitting and implementing a Site-Specific Health and Safety Plan (HASP) in accordance with all applicable health and safety requirements for work in and with contaminated soil, sediment and water. The Engineer shall review all submittals for compliance with the health and safety requirements. Excavation shall not be commenced until the Engineer's review has been completed as evidenced by written comment and acceptance as to completeness and compliance with these specifications. The Engineer will not approve the plan. However, acceptance of the plan by the Engineer implies only that at the time of review, the Engineer was not aware of any reasons to object to the plan. The acceptance of the plan, by the Engineer, does not relieve the Contractor of any responsibilities under the contract.

Construction Requirements.

The Contractor shall employ a Certified Industrial Hygienist (CIH) or Certified Safety Professional (CSP) to develop and oversee implementation of the Contractor's HASP. The CIH/CSP shall prepare the HASP to protect the Contractor's employees, the subcontractor's employees, NJDOT employees and consultants, and the public from contamination present in the areas requiring excavation as designated on the construction plans. The HASP shall be prepared in accordance with all applicable local, state, and federal rules and regulations, including the health and safety requirements of OSHA 29 CFR parts 1910 and 1926.

The CIH/CSP shall review the site specific data and address the proposed activities to the level of detail as needed to ensure that site specific data, appropriate regulations, and a description of the site conditions are incorporated into the

HASP. The Contractor shall comply with all the requirements of the accepted HASP during the excavation, handling, stockpiling, disposal, or recycling of regulated wastes.

The HASP as needed shall describe workplace and emergency procedures to be followed so that this project may be constructed in a safe manner. The HASP shall govern all facets of the project constructed and encompass the activities of all persons who enter and/or work on the site. The HASP shall incorporate procedures that conform to all federal, state, and local regulations pertaining to employee working conditions where appropriate, National Institute for Occupational Safety and Health (NIOSH), Occupational Safety and Health Administration (OSHA), US Coast Guard, US Environmental Protection Agency (USEPA), and New Jersey Department of Environmental Protection (NJDEP).

The HASP shall require that a health and safety designate monitor the working conditions during all excavation procedures and during the handling of regulated wastes to ensure conformance with the accepted HASP. The CIH/CSP shall evaluate the need for air monitoring during excavation and loading operations in Regulated Waste. The air monitoring program shall, if deemed necessary by the CIH/CSP, be implemented by the CIH/CSP or an assigned designate suitably trained and approved by the CIH/CSP for the work required. The CIH/CSP shall include in the HASP applicable training and qualifications documentation for him/her self and each health and safety designate.

The Contractor shall deliver four (4) copies of the HASP and a listing of the health and safety personnel prior to clearing site to the Engineer for review and acceptance at least one month prior to beginning excavation. No work on the site shall be permitted until the HASP has been submitted, reviewed and accepted by the Engineer. The Contractor shall be responsible for implementing the HASP submitted to and accepted by the Engineer. The Contractor shall deliver original logs and reports related to the HASP to the Engineer on a weekly basis.

C. MATERIAL HANDLING PLAN

This work shall consist of developing and implementing a Materials Handling Plan (MHP) for Regulated Waste encountered, moved, and disposed and/or recycled during construction. The MHP shall explain the Contractor's planned techniques to be used in managing Regulated Waste so as to protect workers, the Resident Engineer and his representatives, visitors, the public and adjoining property owners against uncontrolled exposure to Regulated Waste, plus to prevent uncontrolled release of Regulated Waste to the environment.

The Contractor shall prepare and submit for Engineer's approval a MHP prior to any excavation. The MHP shall detail standard operating procedures for excavation, stockpiling, transporting, sampling and analysis, measurement, transportation, and disposal of hazardous and regulated waste. The Contractor shall make all necessary modifications to the MHP that result from comments given by the Engineer and the Department. The Contractor shall perform planning, administrative and control functions required in implementing the MHP. The MHP shall be in full compliance with the Specification. The Contractor shall implement the MHP in accordance with the contract documents.

The Contractor shall not commence work activities governed by the MHP until the Engineer has given written acceptance of the MHP. The Contractor shall submit the MHP to the Engineer for review and acceptance at least one month prior to commencing excavation.

The Contractor MHP shall include at a minimum: details of current certification, permits, insurance types and levels of coverage; qualifications of the transportation and receiving facilities; the types of equipment to be used in transporting regulated waste; proposed route(s) to disposal facilities and weighing facilities; waste characterization forms, sampling logs and analyses reports; transport manifests; and waste disposal documentation forms from the receiving facility.

202.09 Milling of HMA.

2. Construction Requirements.

THE FOLLOWING IS ADDED AFTER THE NINTH PARAGRAPH:

Milled areas shall not be left unpaved for longer than 72 hours, unless approved by the Engineer.

Subsection 202.13 Disposal of Regulated Waste.

THE TITLE AND CONTENT OF THIS SUBSECTION IS CHANGED TO:

202.13. Off-Site Management of Regulated Waste
Off-Site Management of Regulated Waste, Hazardous

Description.

This work shall include the loading and off-site transport, and disposal of Regulated Waste and Regulated Waste, Hazardous. The disposal, recycling or treatment of Regulated Waste and Regulated Waste, Hazardous shall be in accordance with these specifications, the Material Handling Plan, Federal and State laws, rules, and regulations and local laws, and the waste management plan of the district of origin. The references to Regulated Waste hereinafter shall mean Regulated Waste and Regulated Waste, Hazardous as appropriate.

Construction Requirements.

The Contractor shall provide all labor, equipment and materials needed to load, transport and dispose/recycle of Regulated Waste in a manner protective of human health and the environment. All work in and with Regulated Waste shall be performed in accordance with the Site Specific Health and Safety Plan and Federal, State and Local regulation.

Transport and Disposal of Regulated Waste.

The Contractor shall provide all personnel, material and equipment needed to transport and dispose/recycle all Regulated Waste generated on the project in accordance with Federal and State laws, rules, and regulations and local laws, the waste management plan of the district of origin and Subsection 201.10.

The Contractor shall be solely responsible for locating and contracting with appropriate hauler(s) and disposal facility(ies) for the Regulated Waste directed to be removed in accordance with Federal and State laws, rules and regulations and local laws. The Contractor shall prepare and submit all documentation to obtain all Federal, State or local approvals and fees necessary for disposing of regulated waste. The Contractor shall ensure that the waste disposal facility(ies) proposed for receipt of the material is (are) properly permitted to accept the classification of Regulated Waste.

The Contractor shall submit to the Engineer, results of waste sampling and analysis, waste facility applications and acceptance documentation, and fee payment requirements at least two weeks prior to planned removal of Regulated Waste. The Contractor shall submit to the Engineer a bill of lading (for ID-27 waste) or a hazardous waste manifest (for hazardous waste) for each truckload of Regulated Waste removed from the site. The bill of landing and/or waste manifest form shall present the following information:

- Transport subcontractor name, address, permit number and phone number.
- Type and quantity of waste removed.
- Weight of vehicle with weigh slip.
- Recycling or disposal facility name, address, permit number and telephone number.
- Date removed from site.
- Signature of transport vehicle operator.
- Waste manifest number.

A representative of the Engineer will sign all waste manifests as the generator of the waste. The Contractor shall submit to the Engineer a copy of all waste manifests of Regulated Waste by the end of the day that the truck leaves the site.

All vehicles leaving the site with Regulated Waste shall be inspected by the Contractor to ensure that no excess soil adheres to the wheels or under carriage of the vehicles, and securely covered and equipped to prevent leakage of water. In the event of leakage of soil or water to the public roads, the Contractor shall immediately clean the road to restore it to the original condition and immediately notify the Engineer.

The licensed hauler shall transport the Regulated Waste to the disposal/recycling facility with no unauthorized stops in between, except as required by regulatory authority. The hauler shall use appropriate vehicles and operating practices to prevent spillage from occurring during transport. Regulated Waste shall not be transported over public roads if they contain free liquid or are sufficiently wet to be potentially flowable during transport.

The Contractor shall obtain appropriate documentation of disposal facility acceptance of the Regulated Waste and provide a copy of the documentation, including the weight ticket slips, to the Engineer and the County of origin within ten working days of waste acceptance at the disposal facility.

Should any problems arise regarding the facility chosen to accept the Regulated Waste for off-site management that would require the return of waste, or should such facility have violated any environmental regulation, which may result in any regulatory enforcement action, the Contractor shall immediately notify the Engineer in writing of such a situation. The Contractor shall propose an alternate disposal facility, and obtain the written approval of the Engineer for off-site management at such facility.

The disposal of all Regulated Material shall be in accordance with the Material Handling Plan, Federal and State laws, rules and regulations and local laws and the waste management plan of the district of origin.

The NJDOT will provide the Contractor with a USEPA Hazardous Waste Identification Number for the project Hazardous Waste.

202.14 Method of Measurement.

THE FOLLOWING IS ADDED:

Off-site management of Regulated Waste, which includes the off-site transport and the disposal/recycling of Regulated Waste, classified as non-hazardous waste shall be measured by the megagram. This will be verified by using certified weigh tickets.

Off-site management of Regulated Waste, Hazardous, which includes the off-site transport and the disposal of Regulated Waste, classified as hazardous waste shall be measured by the megagram. This will be verified by using certified weigh tickets.

Sampling and Analysis for disposal and/or recycling will be measured by the unit. Each unit will include all costs associated with planning, collecting, analyzing, and processing individual waste characterization samples as needed by regulatory authority and/or disposal/recycling facility to classify regulated wastes and obtain regulatory and/or facility approval for acceptance.

202.15 Basis of Payment.

THE FOLLOWING PAY ITEMS ARE ADDED:

<i>Pay Item</i>	<i>Pay Unit</i>
ROADWAY EXCAVATION, REGULATED WASTE, HAZARDOUS	CUBIC METER
OFF-SITE MANAGEMENT OF REGULATED WASTE	MEGAGRAM
OFF-SITE MANAGEMENT OF REGULATED WASTE, HAZARDOUS	MEGAGRAM
SAMPLING AND ANALYSIS FOR DISPOSAL AND/OR RECYCLING	UNIT

Separate payment will not be made for mobilizing, preparing periodic reports, or planning special handling and placement of regulated waste or regulated waste, hazardous, in a manner protective of human health and the environment. All costs associated with labor, equipment, and materials needed for special handling and placement of regulated waste shall be included in the applicable excavation pay items.

Separate payment will not be made for the development and implementation of the Site Specific HASP, including supply and operation of air quality monitoring equipment performed during execution of excavation, handling, stockpiling and transport of regulated wastes, but, all costs thereof shall be included in applicable excavation and disposal pay items.

Separate payment will not be made for the developing and implementation of the Material Handling Plan (MHP). Payment for preparation, implementation, monitoring and administration of the MHP, including supervision, documentation, and monitoring performing during execution of excavation, handling, stockpiling and transport of Regulated Waste, shall be included in applicable excavation and disposal pay items.

Separate payment will not be made for Management of Regulated Waste or Regulated Waste, Hazardous, but all costs thereof shall be included in applicable excavation pay items.

Payment for dewatering of Regulated Waste will be made under the item "Dewatering Basins".

SECTION 206 - FOUNDATION AND BRIDGE EXCAVATION

206.07 Excavation.

THE FOLLOWING IS ADDED:

Excavated material shall be contained in such a way as to prevent it from falling into the waterway. Any material, which falls into waterway, shall be removed immediately by the Contractor at no cost to the State.

206.08 Cofferdams.

THE 2ND PARAGRAPH IS CHANGED TO:

With the exception of the Route 46 Culvert, cofferdams shall be so constructed as to protect the foundation and the construction against damage from a rise in the water elevation. The cofferdams built around the Route 46 Culvert shall be built to the elevations shown on the plans to prevent normal water flows, and allow storm flows to pass through the culvert opening. The contractor shall protect all equipment and material from damage due to this condition.

SECTION 207 – SUBSURFACE STRUCTURE EXCAVATION

207.02 Classification of Excavation

THE FOLLOWING IS ADDED:

Subsurface Structures excavation shall also include the excavation of Regulated Waste as noted in the Rules of the Solid Waste Administration, NJDEP, in accordance with the rules and regulations of NJAC 7:26 and as noted on the environmental plan sheet.

207.03 Bedding Materials.

SUBSECTION HEADING IS CHANGED TO:

207.03 Bedding and Backfill Materials.

THE FOLLOWING IS ADDED:

Controlled Low Strength Material (CLSM) shall conform to Subsection 919.22

207.04 Construction Requirements

THE FOLLOWING IS ADDED:

Work conducted in Regulated Waste identified on the Environmental Plans as containing contaminants above NJDEP restricted use criteria shall be in accordance with Subsection 202.04 and 202.13 Off-Site Management of Regulated Waste and 212.06.

207.06 Backfilling

A. Pipes and Culverts

THE FOLLOWING IS ADDED AFTER THE FIRST SENTENCE:

Backfill to a height of 600 millimeters above the top of New Jersey American Water Pipes shall be made with Dense Graded Aggregate conforming to subsection 901.08.

THE FOLLOWING IS ADDED AFTER THE FOURTH PARAGRAPH:

CLSM may be used as alternate backfill material when backfilling trenches for drainage pipe and utility conduit. Combining other backfill materials in the same trench as CLSM shall not be permitted. Mixing and

placement of CLSM shall begin only when the ambient temperature is at least -1 °C. During placement, the CLSM mixture shall have a temperature of at least 5 °C and shall not be placed on frozen ground. The CLSM mixture shall be discharged directly from the truck into the trench to be filled with care taken to prevent the pipe from becoming displaced. After placement, the CLSM mixture shall be cured and protected to prevent damage from cold weather according to Subsection 405.14. CLSM shall not be used to replace pavement, base courses or drainage layers that form the structure of the roadway.

207.07 Excess or Unusable Material

REPLACE THE FIRST PARAGRAPH WITH THE FOLLOWING:

Excavated Regulated Waste shall be disposed of in accordance with Subsection 202.13 Off-Site Management of Regulated Waste and 202.13 Off-Site Management of Regulated Waste, Hazardous

207.08 Method of Measurement

THE FOLLOWING IS ADDED:

Off-site Management of Regulated Waste shall be in accordance with 202.13. Sampling and Analysis for Disposal and/or Recycling will be measured in accordance with 202.14.

207.09 Basis of Payment

THE THIRD AND FOURTH PAY ITEMS ARE CHANGED TO:

ROCK EXCAVATION, SUBSURFACE STRUCTURES
PIPE BEDDING, CLASS ____

CUBIC METER
CUBIC METER

THE FOLLOWING IS ADDED:

Separate payment will not be made for implementing Site Specific Health and Safety Plan requirements, and reporting requirements in accordance with Subsection 202.04 Management of Excavation and Subsection 202.13, and all associated costs shall be included in the applicable pay item for which subsurface structure excavation is performed.

SECTION 212 – SOIL EROSION AND SEDIMENT CONTROL

212.06 Soil Erosion and Sediment Control Measures.

J. Dewatering Basin.

THE FOLLOWING IS ADDED:

The Contractor shall control all storm and ground waters removed from excavations in areas of Regulated Waste and groundwater so as to capture all free product and meet discharge requirements for permitted discharge to dewatering basin, surface water body or storm sewer system as selected by the Contractor. Following use, the discharge basin shall be backfilled using soils excavated during construction of the basin.

THE FOLLOWING IS ADDED:

K. Pollution Prevention And Control Plan

Description. This work consists of developing and implementing a Pollution Prevention and Control Plan (hereinafter referred to as PPC Plan) to prevent unpermitted discharge of contaminated storm water, ground water, sediments and/or free product during stormwater control, excavation and dewatering operations.

Construction Requirement. The Contractor shall prepare a PPC Plan detailing methods, personnel, equipment, and reporting requirements in preventing unpermitted discharge of contaminated sediment and water generated during stormwater control, excavation and dewatering operations. The PPC Plan shall comply with all Federal, state, and local laws, rules, and regulations relative to contaminated discharges. The

Contractor shall submit the PPC plan to the Engineer for review and approval at least one month prior to beginning excavation.

The PPC Plan shall provide methods and equipment for collecting, pumping, treating, monitoring, and disposing liquids generated during storm water control, measures to prevent storm water run-on and runoff, dewatering of excavations, dewatering of sediments, decontaminating personnel and equipment, and storing fuels and chemicals. The PPC Plan shall detail water collection, treatment, monitoring, discharge activities, and reporting requirements. The PPC plan shall require that water collection, treatment, monitoring, and discharge activities, personnel and equipment, and relevant quantities shall be included in daily construction reports.

Water removed from excavations and decant water derived from contaminated soil/sediment shall be handled and treated such that when the water is discharged to the dewatering basin, it is done in accordance with all Federal, State and local regulations governing such discharges.

The Contractor shall maintain a PPC log of incidents and water collection, monitoring, and handling activities, and shall make the log available to the Engineer upon request. The PPC log shall note daily water removal, treatment and discharge volumes, effluent sampling activities and results, discharge or spill incidents, and sampling and reporting activities.

L. Oil-Water separator.

The Contractor shall provide all personnel, materials and equipment to mobilize, operate and maintain an oil-water separator for removal of free product and contaminated sediments generated in dewatering excavations in areas of petroleum contaminated groundwater. If the Contractor chooses to conduct multiple dewatering operations in such areas, then multiple oil-water separators shall be required to properly treat all flows.

The oil-water separator shall be a self-contained factory assembled unit capable of removing free petroleum product and contaminated sediments to achieve a discharge quality of less than 30 parts per million as total petroleum hydrocarbon or as required by discharge permits obtained by the Contractor. The separator shall be designed in accordance with Chapters 3 and 5 of the American Petroleum Institute (API) manual on disposal of refiner wastes (volume on liquid wastes, latest edition) and with API bulletin #1630, First Edition, May, 1989. Each separator shall be designed for intermittent, varied or continuous flows of water, oil and/or combinations on non-emulsified oil-water mixtures, and in a manner to minimize solids buildup in the separators oil-water collection chamber that would reduce the efficiency of the unit.

Construction and thickness of each separator shall be in strict accordance with Underwriters Laboratories UL-58 standard for steel tanks for flammable and combustible liquids. Each separator shall bear Underwriters label. Each separator shall be mounted so that the unit may be moved about the project as needed.

The Contractor shall dispose all oils and sediments collected in the oil-water separator(s) in accordance with subsection 201.10 and the Solid Waste Management Act (NJSA B:1 E-1). No separate payment will be made for the disposal of oils and sediment collected in the oil-water separator.

212.09 Method of Measurement.

THE FOLLOWING IS ADDED:

Development, preparation, and acceptance of the Contractor's PPC Plan will not be measured.

Implementation of the Contractor's PPC Plan will not be measured.

Oil-Water separator will be measured by the unit.

212.10 Basis of Payment.

THE FOLLOWING IS ADDED:

Pay item
OIL-WATER SEPARATOR

Pay unit
UNIT

The Oil-water separator shall include all costs associated with purchase, permitting, operation, maintenance, demobilization of equipment; monitoring and reporting; and disposal of wastes. No separate payment will be made for the disposal of oils and sediment collected in the oil-water separator.

Payment for dewatering will be made under the pay item "Dewatering Basin".

Separate payment will not be made for any work involved in adhering to the PPC plan and implementing the various provisions thereof.

Payment for development of the PPC plan will be made under the applicable excavation pay items.

DIVISION 300 - BASE COURSES

SECTION 301 - SOIL AGGREGATE BASE COURSE AND DENSE-GRADED AGGREGATE BASE COURSE

301.08 Maintenance Under Traffic.

THIS SUBSECTION IS CHANGED TO:

When it is provided on the Plans that traffic is permitted to ride on the completed base course, the base course shall be maintained smooth and uniform until covered by the following stage of construction.

DIVISION 400 - SURFACE COURSES

SECTION 404 – HOT MIX ASPHALT (HMA)

404.05 Plant Laboratory.

ITEM 23. OF THE FIFTH PARAGRAPH IS CHANGED TO:

23. Microcomputer and workstation requirements shall be according to Subsection 106.06.

404.06 Vehicles for Transporting HMA Mixtures.

THE ENTIRE SUBSECTION IS CHANGED TO:

The mixture shall be transported from the mixing plant to the Project in trucks equipped with tight, clean bodies, which may be lightly coated with a soap or lime solution, or other such non-petroleum-based release agent. Under no circumstance shall a petroleum-based product be used as a release agent.

The trucks shall be permanently equipped with an airfoil that is capable at any speed or under any weather conditions to deflect air over the tarp and to prevent air from going under the tarp. The airfoil will be affixed no more than 600 millimeters in front of the tarp roll and be at least as high as the top of the tarp roll.

Each truckload shall be covered immediately after loading at the plant with a waterproof tarpaulin of such size to protect the mixture from the weather. The tarpaulin shall be able to withstand normal handling and placement temperatures of up to 205 °C without endangering the structural integrity and serviceability of the fabric. The tarpaulin shall also comply with one of the following:

1. A heavyweight tarpaulin to completely drape the load. The heavyweight tarpaulin shall have a minimum weight of 0.61 kg/m² and shall be a minimum of 600 millimeters wider and 1.2 meters longer than the truck body. The heavyweight tarpaulin shall securely meet or overlap the top of the tailgate and be securely held in place so as to prevent air from lifting the tarp during transport.
2. A tarpaulin equipped with side and back flaps sufficient to lap down outside along the sides and rear of the truck bed a minimum of 300 millimeters. The tarpaulin shall be secured by tie downs at a maximum of 1.5 meter spacing along the sides and rear of the truck.

The truck bodies shall be insulated or heated as necessary, to ensure delivery of the mixture at the specified temperature. Any truck that: causes excessive segregation of the mixture by its suspension or other contributing factors; leaks; causes delays; does not have an airfoil; or does not have an approved tarpaulin shall be removed from the work until such conditions are corrected and the truck is presented for inspection to the Engineer. The Engineer may require that all vehicles for transporting HMA mixture to be used by the contractor be made available for inspection at the plant laboratory prior to any shipments of materials.

404.25 Method of Measurement.

THE SIXTH FULL PARAGRAPH FROM THE LAST IS CHANGED TO:

The basic asphalt price index will be the monthly asphalt price index published during the month of Advertisement.

THE EIGHTH AND NINTH PARAGRAPHS ARE CHANGED TO:

Sealing of Cracks in HMA surface course will be measured by the linear foot.

Sawing and sealing joints in HMA overlays will be measured by the linear foot. Sawing joints in base or intermediate course will be measured by the linear foot.

404.26 Basis of Payment.

THE NINTH AND THIRTEENTH PAY ITEMS IN THE FIRST PARAGRAPH ARE CHANGED TO:

SAWING JOINTS IN INTERMEDIATE OR BASE COURSE
CORE SAMPLES, HOT MIX ASPHALT

LINEAR METER

THE FOLLOWING PAY ITEM IS DELETED:

SEALING OF CRACKS AND JOINTS IN HOT MIX ASPHALT SURFACE COURSE

SECTION 406 – SUPERPAVE HOT MIX ASPHALT COURSES

406.13 Surface Course Rideability Requirements.

For this Project, the no payment reduction provisions shall govern.

DIVISION 500 - BRIDGES AND STRUCTURES

SECTION 501 - CONCRETE STRUCTURES

501.01 Description

THE FOLLOWING IS ADDED:

Deck slabs, sidewalk, parapets and barrier curbs shall be constructed with the use of a calcium nitrite based corrosion inhibitor admixture for the protection of reinforcement steel and its accessories against corrosion as specified in Subsection 501.12.

501.02 Materials.

THE FOLLOWING IS ADDED AFTER THE FIRST PARAGRAPH:

The epoxy resin system that is to be used for the filling of concrete cracks by pressure injection shall be a two component 100 percent solid moisture insensitive high-modulus high-strength epoxy resin adhesive. The following products, or approved equal, may be used:

1. Sikadur Hi-Mod LV, manufactured by Sika Corporation.
2. Duralcrete, as manufactured by Dural International Corporation.
3. Metabond HMLV, as manufactured by American Metaseal Company.
4. Thermal-Chem Injection Resin Product No. 2, as manufactured by Thermal-Chem, Inc.
5. Concessive 1380, as manufactured by Adhesive Engineering Co. of San Carlos, California.

501.07 Forms.

7. Permanent Steel Bridge Deck Forms.

THE FIRST SENTENCE OF THE SECOND PARAGRAPH IS CHANGED TO:

The use of permanent steel bridge deck forms shall conform to the following:

501.25 Method of Measurement.

THE FOLLOWING IS ADDED:

Concrete in Superstructures, Sidewalk with Corrosion Inhibitor Admixture will be measured by the cubic meter, and Concrete in Superstructures, Parapets with Corrosion Inhibitor Admixture will be measured by the linear meter.

501.26 Basis of Payment.

THE FOLLOWING IS ADDED:

Payment will be made under:

Pay Item

CONCRETE IN SUPERSTRUCTURES, SIDEWALK WITH CORROSION
INHIBITOR ADMIXTURE
CONCRETE IN SUPERSTRUCTURES, PARAPETS WITH CORROSION
INHIBITOR ADMIXTURE

Pay Unit

CUBIC METER

LINEAR METER

No separate payment will be made for calcium nitrite based corrosion inhibitor admixture in Sidewalk, Parapets, and Barrier Curb, Bridge pay items. The cost of calcium nitrite based corrosion inhibitor admixture shall be included in the appropriate pay items.

SECTION 503 - STEEL STRUCTURES

503.18 Basis of Payment.

THE SECOND PARAGRAPH IS CHANGED TO:

Structural bearing assemblies shall include payment for furnishing all labor, materials, tools, equipment and incidentals, and all work involving furnishing, testing, and installing said bearing assemblies, complete and in place, as shown on the Working Drawings.

SECTION 512 – TEMPORARY STRUCTURES

512.01 Description.

THE FOLLOWING IS ADDED:

This work shall also include the construction and maintenance of temporary beams and diaphragms to support the existing deck as shown on the staging plan. Beams may be supported by the existing abutment or by an independent support system. The beams shall not reduce the existing minimum vertical clearance at the bridge. Non-shrink grout shall be placed between the top of the beam and bottom of the existing deck to ensure continuous support along the span.

512.03 Working Drawings.

THE FOLLOWING IS ADDED:

Design calculations for temporary beams, diaphragms, and support system shall be provided. For beams placed on the existing abutments, calculations shall include abutment capacity at support location and overall abutment stability.

512.04 Capacity.

THE FOLLOWING IS ADDED:

Design live load shall be HS20-44 as defined in AASHTO.

512.07 Method of Measurement.

THE FOLLOWING IS ADDED:

All required items to support, construct, and maintain the temporary beams will be paid on a lump sum basis.

512.08 Basis of Payment

THE FOLLOWING IS ADDED:

Payment will be made under:

<i>Pay Item</i>	<i>Pay Unit</i>
TEMPORARY BEAMS AND SUPPORTS	LUMP SUM

SECTION 513 – SHEETING, TEMPORARY AND LEFT IN PLACE

513.05 Method of Measurement.

THE FIRST TWO PARAGRAPHS ARE DELETED AND THE FOLLOWING IS ADDED:

Temporary Sheeting and Sheeting Left in Place will be measured by the square meter. The area measured will be the product of the average height determined by extending a line from the bottom of excavation to the top of sheeting to a vertical plane and the length of sheeting indicated.

SECTION 519 - PREFABRICATED MODULAR WALLS

519.01 Description.

Prefabricated Modular Wall Systems acceptable for use in the project are as follows:

DOUBLEWAL as manufactured by
The Doublewal Corporation
7 West Main Street
Plainsville, CT 06062
Telephone Number: 860-747-1627

T-WALL as manufactured by
The Neel Company
8328-D Tratford Lane
Springfield, VA 22152
Telephone Number: 703-913-7859

SECTION 520 - MECHANICALLY STABILIZED EARTH (MSE) WALLS

520.01 Description.

The acceptable MSE walls are as follows:

Reinforced Earth as manufactured by
Reinforced Earth Company
8614 Westwood Center Drive, Suite 1100
Vienna, VA 22182-2233
Telephone Number: 703-749-4325

Inter-Loc as manufactured by
Atlantic Concrete Products
8900 Old Route 13
P. O. Box 129
Tullytown, PA 19007
Telephone Number: 215-945-5600

Retained Earth as manufactured by
Foster Geotechnical
1372 Old Bridge Road, Suite 101
Woodbridge, VA 22192
Telephone Number: 703-499-9818

SSL MSE Plus Retaining Wall System as manufactured by
SSL
4740-E Scotts Valley Drive
Scotts Valley, CA 95066
Telephone Number: 831-430-9300

Isogrid Retaining Wall System as manufactured by
The Neel Company
8328-D Traford Lane
Springfield, VA 22152
Telephone Number: 703-913-7859

DIVISION 600 - INCIDENTAL CONSTRUCTION

SECTION 602 - PIPES

602.03 Construction Requirements.

THE FOLLOWING IS ADDED:

Excavation associated with the construction of pipes in material that exhibits the characteristics of ID-27 hazardous contaminated soil, sediment or debris shall also be in accordance with Subsections 202.04 and 202.13.

Excavation associated with the construction of pipes shall be managed in accordance with Subsections 202.04 Management of Regulated Waste and 202.13 Off-site Management of Regulated Waste.

602.11 Basis of Payment.

THE FOLLOWING PAY ITEMS ARE DELETED:

___ X ___	MM REINFORCED CONCRETE CULVERT PIPE ARCH, CLASS ___	LINEAR METER
___ X ___	MM REINFORCED CONCRETE SEWER PIPE ARCH, CLASS ___	LINEAR METER

SECTION 603 – INLETS AND MANHOLES

603.01 Description.

THE FOLLOWING IS ADDED:

This work shall also include construction of detention basin outlet control structures, labeled Outlet Structure 1 and Outlet Structure 2.

This work shall also include construction of Meter or Valve Chambers.

603.06 Precast Concrete Inlets and Manholes.

THE FOLLOWING IS ADDED:

Detention basin outlet structures shall be precast concrete. Orifice openings of the sizes and elevations shown on the plans shall be formed in the walls of the outlet structures. All ground level openings shall be equipped with trash racks as shown on the plans.

Meter or Valve Chambers shall be precast concrete. Interior and exterior horizontal dimensions and details including ladder rungs and segment joints shall match NJDOT Standard Detail for Inlets, Type E. The Meter or Valve Chamber floor shall be set 600 millimeters lower than the centerline of the water pipe that passes through the chamber. Voids shall be provided in the chamber walls where needed to accommodate plain water pipe, but not pipe joints. A concrete pedestal, 300 by 300 millimeter horizontal dimensions shall be provided to support valves and meters. A 75 millimeter diameter opening shall be provided at the bottom of one wall of the inlet, to allow the interior to drain. The 75 millimeter opening shall drain to a 600 by 600 by 600 millimeter deep pocket of Coarse Aggregate No. 2.

Vertical Sand Filters.

Where indicated on the plans, vertical sand filters shall be constructed around detention basin control structures. A vertical sand filter consists of a continuous bed of clean sand contained between two rows of gabions

Materials

Woven Wire Mesh Gabions

Wire – All test on the wire mesh must be performed prior to manufacturing the mesh.

Tensile Strength - both the wire used for the manufacture of gabions and the lacing wire, shall have a tensile strength of 38-48kg/mm², in accordance with ASTM A641-97.

Elongation – The test must be carried out on a sample at least 30 cm. Long. Elongation shall not be less than 12%, in accordance with ASTM A370-92.

Zinc Coating – minimum quantities of zinc according to ASTM A641-97, Class III soft temper coating.

Adhesion of zinc coating - the adhesion of the zinc coating to the wire shall be such that, when the wire is wrapped six turns around a mandrel having four times the diameter of the wire, it does not flake or crack when rubbing it with bare fingers, in accordance with ASTM A641-97.

PVC (Polyvinyl) coating

Specific Gravity: 1.3-1.35 kg/cm³ in accordance with ASTM D792, Table 1.

Hardness : between 50 and 60 Shore Durometers, according to ASTM D2240.

Tensile Strength: not less than 20.6 Mpa according to ASTM D412-92

Modulus of Elasticity – not less than 18.6 Mpa according to ASTM D412-92.

Abrasion Resistance – the percentage of the weight loss shall be less than 12% according to ASTM D1242-92.

Creeping Corrosion: maximum penetration of corrosion of wire from a square cut end shall be less than 25 mm when the specimen has been immersed for 2,000 hours in a 50% solution HCL.

The accelerating aging tests are as follows:

Salt Spray Test : test period 3,000 hours, test method ASTM B117-94.

Exposure to UV rays : test period 3,000 hours at 63° C, test method ASTM D1499-92a and ASTM G23-93 apparatus Type E.

Brittleness temperature: no higher than -9° C or lower temperature when specified by the purchaser, when tested in accordance with ASTM D746.

The properties after age testing shall be as follows:

Appearance of coated mesh : no cracking, stripping or air bubbles, and no appreciable variation in color.

Specific Gravity: variations shall not exceed 6%.

Hardness : variations shall not exceed 10%.

Tensile Strength : variations shall not exceed 25%.

Modulus of Elasticity : variations shall not exceed 25%.

Abrasion Resistance : variations shall not exceed 10%.

Brittleness Temperature : shall not exceed +18° C.

Galvanized and PVC coated wire mesh gabions (8 x 10 mesh type):

PVC coating thickness : Nominal 0.5 mm., minimum - 0.38 mm

Mesh wire: Diameter – 2.7 mm. Internal, 3.70 mm. external.

Selvedge wire: Diameter – 3.40 mm internal, 4.40 mm external.

Mesh Opening: Nominal dimension D=83 mm

Galvanized and PVC coated lacing wire and internal stiffeners:

PVC coating thickness: Nominal 0.5 mm., minimum - 0.38 mm

Lacing wire: Diameter – 2.2 mm. Internal, 3.20 mm. external.

Stiffener wire: Diameter – 2.2 mm. Internal, 3.20 mm. external.

Overlapping Fasteners

Overlapping stainless steel fasteners may be used in lieu of lacing wire for basket assembly and installation. The spacing of the fasteners during all phases of assembly and installation shall be in accordance with spacing based on 543 kg. pull apart resistance for PVC coated mesh and with a nominal spacing of 100 mm and not to exceed 150 mm.

Stainless Steel Fasteners: diameter 3.05 mm, according to ASTM A313, Type 302 Class I. Tensile strength 156 – 178 kg/mm² in accordance with ASTM A313-92.

Proper installation of rings: A properly formed overlapping fastener shall have a nominal overlap of 25 mm after closure.

Tolerances

Wire: Zinc coating in accordance with ASTM A641-97, Class III soft temper coating.

Gabions: $\pm 5\%$ on the length, width and height.

Mesh Opening: Tolerances on the hexagonal, double twisted wire mesh opening shall not exceed $\pm 10\%$ on the nominal dimension.

Fabrication

Gabions shall be manufactured with all components mechanically connected at the production facility. The front, base, back and lid of the gabions shall be woven into a single unit. The ends and diaphragms shall be factory connected to the base. The lid may be a separate piece made of the same type mesh as the basket and top, or lid, shall be selvaged with wire having a larger diameter. The gabion is divided into cells by means of diaphragms positioned at approximately 3 ft. centers. The diaphragms shall be secured in position to the base so that no additional lacing is necessary at the jobsite.

Rock Fill

The rock for gabions shall be hard, angular to round, durable and of such quality that they shall not disintegrate on exposure to water or weathering during the life of the structure. Gabion rocks shall range between 0.10 meters and 0.2 meters. The range in sizes shall allow for a variation of 5% oversize and/or 5% undersize rock, provided it is not placed on the gabion exposed surface. The size shall be such that a minimum of three layers of rock must be achieved when filling the gabions.

Clean Sand

Clean sand shall be soil aggregate Gradation Designation I-8 conforming to the requirements of Subsection 901.09.

Filter Fabric

Filter fabric shall be a riprap filter geotextile conforming to Subsection 919.06.

Decorative Landscape Stone

Decorative Landscape Stone shall be a durable, rounded stone, not crushed, conforming to Subsection 901.05. Stone size shall be uniformly graded between 25 millimeter and 50 millimeter.

Construction

Gabion Assembly

Gabions are supplied folded flat and packed in bundles. Larger units may be supplied in rolls. The units are assembled individually by erecting the sides, ends, and diaphragms, ensuring that all panels are in correct position, and the tops of all sides are satisfactorily aligned. The four corners shall be connected first, followed by the internal diaphragms to the outside walls. All connections should use lacing wire or fasteners as described above under Overlapping Fasteners.

The procedure for using lacing wire consists of cutting a sufficient length of wire, and first looping and/or twisting the lacing wire to the wire mesh. Proceed to lace with alternating double and single loops through every mesh opening approximately every 150 mm, pulling each loop tight and finally securing the end of the lacing wire to the wire mesh by looping and/or twisting.

Gabion Installation

After initial assembly, the gabions are carried to their final position and are securely joined together along the vertical and top edges of their contact surfaces using the same connecting procedures described above under the heading Assembly. Whenever a structure requires more than one layer, the upper empty baskets shall also be connected to the top of the lower layer along the front and back edges of the contact surface using the same connecting procedures described above under the heading Assembly.

Gabions shall be installed in a trench with a flat bottom, with a minimum depth as shown on the plans. Spacing between rows of gabions shall be uniform. The top of both rows of gabions shall be level, plus or minus 50 millimeters, and set to the elevation shown on the plans. The gabions shall be imbedded a minimum of 300 millimeters into the slopes of the detention basin.

Gabion Filling

Gabions shall be filled with rock as described under the heading Rock Fill. During the filling operation some manual stone placement is required to minimize voids. The exposed faces of vertical structures may be carefully hand

placed to give a neat, flat, and compact appearance. Care shall be taken when placing fill material to assure that the sheathing on the PVC coated baskets will not be damaged.

The cells shall be finished in stages so that local deformation may be avoided. That is at no time, shall any cell be filled to a depth exceeding 0.30 meters higher than the adjoining cell. It is also recommended to slightly overfill the baskets to allow for settlement of rock. Behind gabion walls, compact the backfill material simultaneously to the same level as the filled gabions.

Internal Connecting Wires

Internal connecting wires shall be used when a structure requires layers of gabions to be stacked on top of each other. Internal connecting wires shall connect the exposed face of a cell to the opposite side of the cell. An exposed face is any side of the gabion cell that will be exposed or unsupported after the structure is completed. Lacing wire or prefabricated internal connecting wires may be used.

1 meter (3 foot) high Gabions shall be filled in three layers, 0.3 meters at a time. Connecting wires shall be installed after the placement of each layer, that is 0.3 meters high, and 0.6 meters wide.

Lid Closing

Once the gabion baskets are completely full, the lids will be pulled tight until the lid meets the perimeter edges of the basket. The lid must then be tightly laced and/or fastened along all edges, ends and tops of diaphragms in the same manner described above under the heading Assembly.

Mesh Cutting and Folding

Where directed by the Engineer, the gabions shall be cut, folded and fastened together to suit existing site conditions. The mesh must be cleanly cut and surplus mesh either folded back or overlapped so that it can be securely fastened together with lacing wire or fasteners in the manner described above under the heading Assembly. Any reshaped gabions shall be assembled, installed, filled, and closed as specified in the previous sections.

Placement of Clean Sand and Decorative Landscape Stone

The trench bottom and both interior faces of gabions shall be lined with filter fabric. Sand shall be placed in a manner that does not displace or distort the gabions. Sand shall not be compacted, but shall be consolidated with the use of mechanical vibrators as described in Subsection 501.12. The top of sand shall be flat (tolerance of plus 25 millimeters, minus 0 millimeters) and shall be at least to the elevation shown on the plans. Filter fabric shall be folded over the top of the sand with 450 millimeter overlap. Decorative landscape stone shall be placed on top of the filter fabric, and the top of the decorative landscape stone shall be flush with the top of gabions.

Payment

There will be no separate payment for Vertical Sand Filters, the cost of which shall be included in the items Outlet Structure.

603.09 Castings and Fittings.

THE FOLLOWING IS ADDED:

All sanitary sewer castings shall be new, with watertight covers similar to Campbell Foundry Co. Flow Seal type covers. Casting pattern shall be similar to Campbell Foundry pattern No. 1206.

The top of detention basin outlet structures shall be covered with a standard Type E Inlet Casting.

The cover for Meter or Valve Chambers shall be a casting complying with NJDOT Standard Construction Detail CD-603-1.7 for New Manhole Castings, Square Frame, Circular Cover.

603.12 Method of Measurement

THE FOLLOWING IS ADDED:

Outlet Structures will be measured by the number of each.

Meter or Valve Chambers will be measured by the number of each.

603.13 Basis of Payment

THE FOLLOWING IS ADDED:

Payment will be made under:

<i>Pay Item</i>	<i>Pay Unit</i>
OUTLET STRUCTURE 1	UNIT
OUTLET STRUCTURE 2	UNIT
METER OR VALVE CHAMBERS	UNIT

Separate payment will not be made for vertical sand filters, castings, pedestals, or trash racks.

SECTION 605 - CURBS

605.10 Method of Measurement.

THE FOLLOWING IS ADDED:

375 X 800 MM Concrete Barrier Curb, Bridge, with Corrosion Inhibitor Admixture will be measured by the linear meter along the face of the gutter line.

605.11 Basis of Payment.

THE FOLLOWING IS ADDED:

Payment will be made under:

<i>Pay Item</i>	<i>Pay Unit</i>
375 X 800 MM CONCRETE BARRIER CURB, BRIDGE, WITH CORROSION INHIBITOR ADMIXTURE	LINEAR METER

SECTION 610 – CULVERTS AND HEADWALLS

610.01 Description

THE FOLLOWING IS ADDED:

This work shall include repairing the westerly end of the existing concrete headwall at the end of the 1400 mm CMP that discharges into Great Notch Brook, approximately 20 meters upstream of Browertown Road. The westerly end of the concrete headwall has been undermined.

610.03 Excavation and Backfilling

THE FOLLOWING IS ADDED:

All work shall be done utilizing hand tools. Vehicles or machinery will not be permitted within the Great Notch Brook drainage easement upstream of Browertown Road.

At the 1400 mm CMP headwall in Great Notch Brook, loose rock and soil in the void under the headwall shall be removed. Three, #19 deformed steel reinforcing bars, 300 mm long, shall be drilled and grouted 150 mm deep into the rock, equally spaced under the center of the headwall.

610.04 Mixing, Placing, Finishing and Curing Concrete.

THE FOLLOWING IS ADDED:

At the 1400 mm CMP headwall, the void under the headwall shall be filled with class C concrete. The repair shall be formed so that the side of the repair facing Great Notch Brook shall be in the same plane as the existing headwall. The westerly side of the repair can be formed to extend beyond the headwall, to allow placement of concrete.

SECTION 614 – FENCES

THE FOLLOWING IS ADDED TO THIS SECTION:

RESET BARBED TAPE FENCE TOP OBSTACLE ON NEW FENCE

Description.

This work shall consist of removing the existing single coil barbed tape fence top obstacle from the existing chain link fence, and attaching it to new chain link fence constructed at Parcel 9G.

Construction Requirements.

In order to secure Parcel 9G during construction, chain link fence shall be constructed at the locations shown on the plans before the existing fence is removed. The existing barbed tape fence top obstacle shall be removed from the existing fence and either stored or immediately installed on the new fence, before the existing fence is dismantled.

New 45 degree galvanized steel barb arms shall be provided at the top of each fence post. One string of new galvanized steel barbed wire shall be installed at the top of the barb arms. The barbed tape fence top obstacle shall be attached to all barb arms at the top, and at 300 mm intervals along the barbed wire and along the top of the chain link fence fabric, using 12 gage galvanized steel hog rings.

Method of Measurement.

Reset Barbed Tape Fence Top Obstacle on New Fence will be measured by the linear meter.

Basis of Payment.

Payment will be made under:

<i>Pay Item</i>	<i>Pay Unit</i>
RESET BARBED TAPE FENCE TOP OBSTACLE ON NEW FENCE	LINEAR METER

Separate payment will not be made for barb arms, barbed wire, hog rings, or other materials needed to attach the barbed tape fence top obstacle to the fence top

CHAIN LINK FENCE, ALUMINUM COATED STEEL, 1.2 M HIGH, BARRIER MOUNTED

Description.

This work shall consist of construction of chain link fence on top of the proposed Route 46 median barrier.

Materials.

Materials shall conform to the following Subsections:

Chain-Link Fence	907.02
Mortar and Grout	914.03
Bolts and Bolting Material.....	917.01
Zinc Chromate Primer	912.07

Construction Requirements.

This work shall follow the requirements of Subsection 508.07, Chain-Link Fence, Bridge, except the posts shall be bolted to the top of the Route 46 median barrier between the limits shown on the plans.

Method of Measurement.

Chain Link Fence, Aluminum Coated Steel, 1.2 M High, Barrier Mounted will be measured by the linear meter.

Basis of Payment.

Payment will be made under:

<i>Pay Item</i>	<i>Pay Unit</i>
CHAIN LINK FENCE, ALUMINUM COATED STEEL, 1.2 M HIGH, BARRIER MOUNTED	LINEAR METER

SECTION 615 - METAL RAILING

615.01 Description.

THE FOLLOWING IS ADDED TO THIS SUBSECTION:

This item shall also include fabricating and erecting an aluminum railing, 1070 mm high, at the location shown on the plans.

615.03 Construction Requirements.

THE FOLLOWING IS ADDED TO THIS SUBSECTION:

Railing shall be fabricated from the following extruded aluminum shapes:

1. Posts shall be 64 mm (minimum) square aluminum extrusions.
2. Top and bottom rails shall be 39 mm by 19 mm (minimum) extruded aluminum channel.
3. Pickets shall be 32 mm (minimum) square aluminum extrusions.
4. Top rail cap shall be an extruded aluminum shape, at least 50 mm wide (in section) and 25 mm high, with an ogee shape on top.

Posts shall be equally spaced along the railing, but not more than 1.5 meters apart center to center. Posts shall be set plumb and in a straight line. Posts shall be set 150 mm deep in concrete foundations and the posts grouted with epoxy in metal sleeves. The sleeves shall be flush with the top of the concrete and accurately positioned for the required post spacing and true alignment of the railing. The space between the posts and sleeves shall be completely filled with epoxy of suitable consistency. Temporary protection against the collection of water and other foreign materials in the sleeves shall be provided by filling the sleeves with sand to within 25 millimeters of the top and sealing with bituminous material. The sand and bituminous material shall be completely removed just before grouting and setting of the railing.

Railing panels shall be fabricated with pickets plumb and top and bottom rails parallel to the sidewalk. Picket spacing and the distance between the sidewalk and bottom rail shall comply with the municipal building code. Pickets shall be welded to the top and bottom rails. Railing panels may be bolted or welded to the posts.

The railing shall have a baked-on black finish.

615.04 Method of Measurement.

THE FOLLOWING IS ADDED TO THIS SUBSECTION:

Railing will be measured by the linear meter along the top of the rail.

615.05 Basis of Payment.

THE FOLLOWING IS ADDED TO THIS SUBSECTION:

Payment will be made under:

Pay Item
RAILING

Pay Unit
LINEAR METER

SECTION 617 - TRAFFIC CONTROL

617.02 Materials.

THE ENTIRE TEXT IS CHANGED TO:

Materials shall conform to the following Subsections:

Removable Wet Weather Pavement Marking Tape and Removable Black Line Masking Tape.....912.12
Temporary Pavement Markers.....912.16

617.03 Traffic Control Devices.

THE FOLLOWING IS ADDED TO THE FIRST PARAGRAPH:

Traffic Control devices shall be NCHRP-350 crash test compliant by the NJDOT implementation dates stated in the table below and shall be duly certified, if necessary.

Traffic Control Device Category	Commonly used NJDOT Traffic Control Devices	AASHTO/FHWA implementation date for newly purchased Devices	NJDOT implementation date for newly purchased Devices	NJDOT deadline By which devices must be NCHRP-350 compliant
1	Traffic cones, drums and delineator guide posts	10/1/1998	1/1/2003	8/15/2003
2	Vertical panel, portable sign supports, and type III barricades	10/1/2000	1/1/2003	8/15/2003
3	Truck mounted attenuators and traffic barriers-impact attenuators (crash cushions), barrier terminals, and longitudinal barriers	10/01/1998 attenuators 10/01/2002 temporary barriers	10/01/1998	3/15/2005
4	Portable, usually trailer-mounted, devices such as lighting supports, flashing arrows panels, temporary traffic signals, and changeable message signs used in or adjacent to the traveled way	to be announced	6/15/2005	6/15/2007

Note: Resident Engineer's approval shall be obtained to use traffic control devices that are certified NCHRP 350 compliant, but not listed in the table.

Newly purchased devices shall be NCHRP-350 compliant. A list of NCHRP 350 compliant and FHWA approved devices can be found at:

http://www.fhwa.dot.gov/safety/fourthlevel/pro_res_road_nchrp350.htm

NCHRP-350 non-compliant, yet adequately serviceable category 3 traffic control devices, such as truck-mounted attenuators (TMA) purchased prior to 10/01/1998, will be allowed to be used until March 15th 2005 upon submitting new- purchase documentation to the Resident Engineer.

3. **Illuminated Flashing Arrows.** The solar powered arrow boards approved for use on projects are:
- a. Work Area Protection – Arrowmaster Model WAAW-15-SB
 - b. Solar Technology Inc. – Silent Sentinel
 - c. Trafcon Industries Inc. – Model TC1-15S
 - d. Protect-O-Flash Inc. – Model No. M-90 (LED bulbs only)
 - e. TRACOM (Trailer Component Mfg., Inc.)

617.04 General.

THE FOLLOWING IS ADDED AFTER THE SECOND PARAGRAPH:

Driveways that are to be removed shall be maintained in service and in a safe condition until the replacement driveways or temporary alternate access has been constructed and is in a safe condition for use of the public. Where internal circulation improvements are needed in a parcel to accommodate new driveways, the existing driveways shall not be removed until the internal circulation improvements are completed to the extent that they can be used safely by the public.

Access to adjoining properties shall be maintained for the duration of the project. Access to businesses shall be maintained to all businesses during normal business hours, unless separate arrangements are made between the contractor and the business owners.

617.15 Removable Pavement Marking Tape.

THE SUBSECTION HEADING AND ENTIRE TEXT ARE CHANGED TO:

617.15 Removable Wet Weather Pavement Marking Tape.

Removable wet weather pavement marking tape shall be installed at designated locations and according to the Manufacturer's recommendations. The tape shall be white or yellow and shall be installed in single or double lines, as designated.

The surface upon which the tape is to be installed shall be prepared according to Subsection 618.05. Removable wet weather marking tape shall be installed on dry surfaces, when the surface temperature is between 10 °C and 65 °C and when the ambient temperature is 10 °C and rising, and when the weather is otherwise favorable as determined by the Engineer. The tape shall not be overlapped, and only butt splices shall be used.

To ensure maximum adhesion, the tape shall be tamped and a truck shall be driven slowly over the tape several times. The tape shall be removed when no longer required for traffic control.

Removable tape that has become damaged and is no longer serviceable shall be replaced immediately and will not be measured for payment. Tape that is damaged by construction operations shall also be replaced without additional compensation.

617.16 Method of Measurement.

THE 16TH PARAGRAPH IS CHANGED TO:

Removable wet weather pavement marking tape will be measured by the linear foot of 100-MM wide strips, deducting the gaps.

617.17 Basis of Payment.

DELETE THE FOLLOWING PAY ITEM:

<i>Pay Item</i>
REMOVABLE PAVEMENT MARKING TAPE

<i>Pay Unit</i>
LINEAR METER

ADD THE FOLLOWING PAY ITEM:

<i>Pay Item</i>
REMOVABLE WET WEATHER PAVEMENT MARKING TAPE

<i>Pay Unit</i>
LINEAR METER

SECTION 618 - TRAFFIC STRIPES AND MARKINGS

618.10 Defective Stripes or Markings.

STEP 2 OF SECOND SUBPART 2 IN THE THIRD PARAGRAPH IS CHANGED TO:

Step 2: All retroreflectance measurements taken with a LTL2000 Retrometer will be made on a clean, dry surface.

618.12 Removal of Traffic Stripes or Traffic Markings.

SUBSECTION IS RENAMED AND CHANGED TO:

618.12 Removal and Replacement of Traffic Delineation Devices.

- A. Removal of Traffic Stripes, Markings, or Reflectors and Castings.** The Contractor shall remove all types of traffic stripes or traffic markings by methods that do not damage the integrity of the underlying pavement or adjacent pavement areas, and that do not cause gouging, or create ridges or grooves in the pavement that may result in compromising vehicular control. Obliterating stripes or markings by painting over them shall not be permitted.

Before starting removal operations, the Contractor shall demonstrate the proposed method to accomplish the complete removal of the reflectors and castings and the removal of approximately 95 percent of the stripe or marking without the removal of more than 2 millimeters of pavement thickness. Area of removal includes the area of the stripe or marking plus 25 millimeters on all sides. Removal operations shall not be permitted until the method of removal has been approved.

Debris from the removal of traffic stripes and markings shall be disposed of according to Subsection 201.10.

Disposal of pavement reflectors and castings shall be in conformance with Subsection 201.10.

SECTION 622 - WATER, GAS, AND SANITARY SEWER LINES

THE FOLLOWING IS ADDED TO THIS SECTION:

TRANSMISSION WATER MAINS (CITY OF NEWARK WATER DIVISION)

Description.

The existing Newark-Pequannock Transmission Water Mains must be replaced before Ramp C and D embankment can be constructed over the pipes. This work shall consist of constructing two, 48inch (1200mm) prestressed concrete cylinder pipe; manways; butterfly valve; eccentric reducer; and tie-ins to existing mains at both ends of each pipe.

The location and depth of existing transmission water mains shown on the plans and profiles is based upon water company record maps and limited information from vacuum extraction test pits. The location and depth are approximate. The contractor shall excavate test pits at each connection to existing pipe and at locations in between, to accurately locate and measure the pipe before ordering materials.

The contractor is advised that tie-in locations are approximate and may have to be adjusted to avoid circumferential rivet seams. Also, due to the age of the pipes, the pipe cross section is probably not circular. Tie-ins must accommodate any out-of-roundness that is found.

Two extra sets of shop drawings and laying schedules shall be provided to the City of Newark for their information and records. The City of Newark will communicate with the Engineer if they have any objections to the shop drawings or laying schedules.

Materials.

Prestressed concrete cylinder pipe shall be manufactured in accordance with their respective ANSI/AWWA requirements mentioned elsewhere in these specifications.

1. Prestressed Concrete Cylinder Pipe.

All 1200mm (48inch) prestressed concrete cylinder pipes shall be either embedded cylinder or lined cylinder pipe manufactured in accordance with AWWA C304 or latest revision. "Prestressed concrete pressure pipe, steel-cylinder type, for water and other liquids," with the following supplemental requirements.

A. General.

Procedures, tests and requirements as set forth herein are in addition to, and for the purpose of monitoring the quality of prestressed concrete pipe supplied under AWWA C304 specifications and the general conditions and special conditions of the contract documents. The material supplier or pipe manufacturer as designated herein shall perform the examinations and tests required and the results forwarded to the Engineer for his information. Compliance with these requirements shall not otherwise relieve the manufacturer of responsibility to furnish materials and perform work in accordance with the specifications requirements. The definition of terms used shall be those as outlined in AWWA C304, Section 1.2. In addition, the term "supplier" shall mean an organization which manufacturers or supplies material to be incorporated in the pipe. Where other standards, specifications or methods are cited without dates, the reference shall be construed to apply to the latest revision in effect at the time of contract. In addition, the manufacturer shall supply the "detailed drawings and schedules," called for in Section 1.5.1; the "Tabulated Layout Schedule," called in Section 1.5.2 and special markings to show identification and location of the pipe or fitting in the line called for in Section 1.6.

Pipe shall be designed for an internal working pressure of 250 pound per square inch; earth dead loads consistent with the depth of burial; and live loads conforming to AASHTO MS 18 + 25% (MS 22.5) or tandem 108 kN axles at 1.200 meter spacing, whichever governs. The manufacturer shall submit design calculations with working drawings for approval prior to the manufacturer of any pipe.

B. Tests and Examinations.

All instruments, gauges and other testing and measuring equipment used in activities affecting quality shall be of proper range, type and accuracy to verify conformance with specification requirements. Procedures shall be in effect to assure that they are calibrated and certified at not longer than annual intervals. Calibration shall be against measurement standards, which have known relationships to national standard where such exist. Gauges must be calibrated and certified for the piece of equipment of which they are a part and must remain on the piece of equipment following certification. Materials and items including product previously checked or manufactured with equipment found out to be out of calibration or adjustment shall be considered unacceptable until it can be determined that all applicable requirements have been met.

The manufacturer shall maintain records of all required tests and inspections. These records shall include documents such as records of materials, manufacturing, examination, repairs, and test data taken before and during fabrication. The Engineer reserves the right to request that specific data be included in the report, which may not otherwise be included. Whenever tests and examinations are performed on a pipe element or pipe, the appropriate identification number shall be shown on the report. Copies of all reports of tests by the manufacturer, independent laboratory, or material suppliers shall be given to the Engineer in such form as to be appropriate for permanent records.

The Engineer shall have access to all records of tests and inspections related to pipe manufactured for use in this contract and shall also have the right to witness any tests being performed by the manufacturer or his suppliers relative to products, materials, or the pipe being produced.

The manufacturer shall provide the Engineer an affidavit that the pipe and appurtenances furnished for this contract comply with the applicable provisions of the specification and AWWA C304.

C. Certification of Materials.

Prior to approval of finished pipe, the manufacturer shall submit certified material test reports for the following materials: aggregates; cement; admixtures; wire mesh reinforcing rod; prestress wire; steel sheet; plate and shapes; joint rings; bolts; lugs and gaskets. Water for mortar and concrete mix shall be certified to be clear clean and to have met the requirements of ASTM C94. Certified reports shall show the actual results of all required chemical analyses, physical tests, examination and heat treatments, including times and temperatures.

The expense of performing all tests and for providing certified test reports required by the contract specification shall be borne by the manufacturer.

D. Concrete and Mortar Mix Design.

The manufacturer shall submit concrete and mortar mix designs for approval of the Engineer prior to fabrication of pipe. Proportions of materials for the mixtures shall be established on the basis of laboratory trial batches using the proposed materials and curing procedures. The following properties shall be measured and reported in accordance with the respective method.

<u>Property</u>	<u>Method</u>
Slump	ASTM C143
Compressive Strength	ASTM C39

The water-cement ratio shall be on the basis of aggregate in saturated-surface dry condition. Proportions shall be established to obtain the required average compressive strength by the methods of ACI 214-77 at a slump of 3-4 inches.

E. Fabrication Testing and Examination.

Testing and examination of the materials used in fabrication of the pipe shall be executed in accordance with the procedure and at the frequency listed in Table 1. Either the material supplier shall do the required testing from independent laboratory, or manufacturer. The test area wherein the tests are performed shall be properly certified and such certification shall meet with the Engineer's approval. All applicable gauges and test equipment within the test area shall be calibrated and certified at no longer than annual intervals. Testing by the material supplier or independent laboratory shall not relieve the manufacturer of the responsibility to provide materials or follow procedures in accordance with the specifications. Where the frequency of testing differs in Table 1 from that required by the referenced specification or test method, the greater frequency shall govern.

Table 1

Reference or				
<u>Material</u>	<u>Requirements</u>	<u>Test</u>	<u>Method</u>	<u>Frequency</u>
Cement	Physical and Chemical Properties	ASTM	C150	Each Shipment
Aggregates	Gradation	ASTM	C136	Weekly
	Moisture Content	ASTM	C566	Daily
	Material Finer Than #200 Sieve	ASTM	C117	Weekly
	Organic Impurities	ASTM	C40	Test frequency shall be on a source basis. The Engineer reserves the right to call for tests during the manufacture of the pipe. The test applied to new sources and the result approved by the Engineer prior to use.
	Flat and Elongated Particles	CRD	C119	Same as above
	Friable Particles	ASTM	C142	Same as above
	Lightweight Particles	ASTM	C123	Same as above
	Specific Gravity and Absorption	ASTM ASTM	C127or C128	Same as above
	Chlorides	ASTM	D1411	Same as above
	Potential Reactivity	ASTM	289	Same as above
	Soundness	ASTM	C88	Same as above
Admixtures	Chemical Composition	Infrared Spectrophotometry, PH, and solids content in accordance with ASTM C494		Each Shipment
Concrete	Mixer Uniformity	ASTM	C94	Initially and every six months

	Sampling	ASTM	C172	
	Compressive Strength Cylinders	ASTM	C31	
	Compressive	ASTM	C39	One set of 2 cylinders daily for each test age for each 100 cu yd or portion thereof and for each class of concrete.
	Slump	ASTM	C143	First batch placed each day and every 100 cu yd or portion thereof for each class of concrete.
	Temperatures			Same as above
	Unit Weight/Yield	ASTM	C138	Weekly
Casting	Proportions on pipe wash out test			Weekly
Mortar	Hardened Mortar Absorption	ASTM Method A	C497	Weekly
Slurry	Proportions Gravity	Specific		Daily
	Application Rate	Discharge Nozzle Flow		Daily for Each Size of Pipe
Prestress Wire	Tension Test	ASTM Supplement IV	A370	Tests shall be applied to each 10,000-pound lot with samples representing one test for every 5 coils, but never less than 3 coils per lot or heat, and not less than 50 consecutive pipes wrapped. If any sample test indicates defective product each coil within the lot or heat shall be tested. If any additional tests indicate any defective product, the entire heat shall be rejected.
	Wrapping test	ASTM Supplement IV	A370	Same as above
	Torsion Test	Number of Twists		Same as above

F. Joints.

All joints shall be double gasket testable type similar and equal to Price Brothers Testable Joints or an approved equal. Restrained-joint clamps shall be used at bends.

2. Closure Assemblies, Specials And Fittings.

All specials and fittings required for bends, branches, closures and connections shall be capable of withstanding the pressures and loads as required. Fittings and specials shall be as described in AWWA C301-92. Outlets and other connections shall be capable of withstanding the pressure and load as required and shall be suitably reinforced.

The contractor shall expose the existing main at the points of intersection with proposed relocations and perform all measurements necessary to fabricate and install the closure assemblies. The contractor shall uncover a sufficient length of pipe to satisfy himself about the need for any additional shorts and other appurtenances required to install the closure assemblies.

The closure assemblies, which will provide access to the mains, shall be of the follower ring type with a 24-inch flanged outlet and blind flanged in closure can. The assembly shall include a double spigot adapter, all necessary bolts, nuts, gaskets and soap. The manufacturer who fabricates the pipe shall supply all assemblies. The manufacturer will supply the services of a field representative to assist in placing the closure assemblies if required.

After the closure assemblies are in place, they shall be temporarily restrained by blocking or welding until the full water pressure has been applied and it has been demonstrated that no leaks have occurred.

When these conditions have been met, the closures shall then be encased in concrete.

3. Restrained joints.

All pipe joints shall be mechanically restrained (harnessed). The joints shall be designed to the maximum thrust exerted by the pipe. The maximum longitudinal stress in the steel cylinder of harnessed pipe section

shall not exceed 13,500 pounds per square inch based on the internal pressure or 17,000 pounds per square inch based on the test pressure and the deflection angle. The steel cylinder thickness in pipe sections between the location of the maximum thrust force and the end of the harnessed section can be prorated on the basis of zero longitudinal thrust at the end of the harnessed section.

4. 48inch (1200mm) Butterfly Valve.

The valve shall be M&H Style 1450 Butterfly Valve, or approved equal, complying with AWWA C504. Valve shall open right. The valve operator shall be covered with a valve box. This item includes a Manhole over the operator and 2"(50mm) brass piping with ball valves and corporation stops on the valve adopter section.

Construction Requirements.

1. **Qualified Contractors.** The contractor shall subcontract the work of constructing transmission water mains (City of Newark Water Division) to one of the city's qualified transmission water main contractors. The following contractors are qualified:

Scafar Contracting, Inc.
225 Pacific St.
Newark, NJ 07114
Jim Scanella
Office: (973) 465-1279
Fax: (973) 465-5286

Montana Construction Co.
286 Leonia Ave.
Bogota, NJ 07603
Dominick Santaite
Office: (973) 478-5200
Fax: (973) 478-7604

F. Gaccione, Inc.
790 Bloomfield Avenue
Building G
Clifton, NJ 07012
Frank Gaccione
Office: (973) 773-3788
Fax: (973) 773-9027

J. Fletcher Creamer & Son, Inc.
101 East Broadway
Hackensack, NJ 07601
Andrew Wood
Office: (201) 488-9800
Fax: (201) 488-2901

Spiniello Companies
35 Airport Road
P.O. Box 1968
Morristown, NJ 07962-1968
Joe Dioslaki
Office: (973) 539-6363
Fax: (973) 539-4802

2. **Test Pits.**

The contractor shall uncover the existing mains at the tie-in points at both ends of Pipe No. 1 first and subsequently Pipe No. 2 when required. The contractor must locate adequate tie-in locations on the existing mains prior to developing his laying schedule.

3. **Laying Schedule.** The contractor shall provide a laying schedule and shop drawings of the prestressed concrete cylinder pipe, appurtenances and closure pieces to the Engineer, prior to manufacturing. The laying schedule shall be tied to the New Jersey Plane Coordinate System.
Upon completion of the water main relocations, the contractor is to provide to the utility company, within 60 days, a complete set of as-built drawings.
4. **Excavation.** The proposed pipes shall be constructed on the same alignment as the existing pipes. Therefore, the existing riveted steel pipes shall be removed during excavation for the new pipes. The existing riveted steel pipe shall become the property of the Contractor and shall be disposed of. All pipes shall be laid in trenches with a minimum of 1.5 meters of earth cover over the top of the pipe as measured from existing grade, as shown on the Profiles.
Trench excavation shall conform to Section 207. The trench shall be excavated carefully, graded to the proper elevation prior to swinging the pipe into place, so as to provide a uniform and continuous bearing and support for the pipe on solid and undisturbed ground throughout its entire length. It will be permissible to disturb the finished grade over a maximum length of 12inch (300mm) near the middle of each pipe length for withdrawal of pipe slings or other lifting tackle. Unless otherwise specified, pipe shall be laid on flat bottom trench with bell holes dug for bells. Bell holes, where required, shall be dug in earth trenches at each joint to permit the joint to be made properly, and to allow the barrel of the pipe to receive bearing pressure along its full length. Care shall be taken not to excavate below required grade. Any part of the bottom of the trench excavated below grade shall be backfilled with dense graded aggregate and thoroughly compacted.
5. **Installation.** Laying shall be in strict accordance with the recommendations of the pipe manufacturer. No pipe shall be laid except in the presence of the Engineer. Proper implements, tools and facilities, satisfactory to the Engineer shall be provided and used by the contractor for the safe and convenient prosecution of the work.
No pipe shall be laid in standing water, or when trench conditions or the weather are unsuitable for such work, except by permission of the Engineer.
Where necessary, trenches and other excavations shall be properly sheeted and braced to prevent damage to pavement, structure, pipes, and utilities, and to provide safe working conditions. The contractor shall be responsible for the adequacy of all sheeting and bracing used and for all damage resulting from its failure or from placing, maintaining and removing it.
The contractor shall ensure that no erosion or undermining of the adjacent water mains takes place while the relocated water mains are under construction.
The contractor shall also undertake all necessary precautions to protect the existing pipelines during construction of the highway, and crossing or adjacent new pipelines.
Following completion of construction and the testing of the double gasket joints, backfill shall be placed in conformance with Section 207 of the standard specifications. Backfill shall be dense graded aggregate or approved equal.
6. **Tie-ins.** The tie-ins to the existing steel pipe at each end will depend upon the location of rivet seams on the steel pipe due to its age; any steel pipe sections found unsuitable for tie-in will be replaced with new prestressed concrete cylinder pipe.
On the east side a 610 mm manway outlet will provide access to the mains, and will be enclosed in an 1800 mm diameter manhole. Closure pieces will also be provided to join up with the new 1200 mm prestressed concrete cylinder pipe previously laid before the tie-in work.
The contractor must reline the interior of the pipe at the connections to existing steel pipes in accordance with AWWA Standard C210-70.
7. **Sequence and Schedule.** In the sequencing of work, the north pipe, (Pipe No. 1 on City of Newark Record Maps) shall be replaced first. It must be returned to service before the work in the south pipe, (Pipe No. 2 on City of Newark Record Maps) begins.
The allowable periods for the shut down of mains for the tie-in connections are between March 15 and May 15 and a less desirable period between October 1 and December 1. The number of days that either of the transmission water mains is shut down is critical to the utility owner. Hence, for each pipe, construction of the pipe and construction of the tie-ins at both ends of each pipeline should be accomplished within a 7-day period. The contractor shall mobilize as many crews as necessary and work continuously on a 24-hour basis, even if he is ahead of schedule, in order to complete the tie-ins and have the pipeline ready for the utility company to place it back in service. Included in this 7 day period shall be the joint testing for leaks, chlorination and sterilization and satisfactory water analyses.
Before the mains are put in service, the trenches shall be properly backfilled and secured to the satisfaction of the Engineer.

Should there be any delays in the tie-in construction and or in placing the relocated main in service expeditiously, the contractor will be held responsible for system damage. After the 7th day of shutdown, the utility company will be forced to obtain water from the other major water purveyors connected to the City of Newark Water System. The contractor will be responsible for the purchase of water at a rate of \$18,700.00 + 20% per day.

Once the relocated north main has been activated, both mains will remain on-line until the Cedar Grove Reservoir downstream of the relocation work is adequately replenished as directed by the utility company, which has been estimated to take 30 days.

Only when the reservoir is full, the existing south main can be shut down for replacement of the transmission water main and construction of the tie-ins.

The tie-ins for the south main will follow a similar schedule as the just completed north main.

At all locations of the existing aqueducts, the contractor's vehicles are not to cross over the existing water facilities to avoid damage to the facilities unless adequately protected.

8. **Testing Double Gasket Joint.** Testing of the joint starts with removing the iron pipe plugs from the outlets located at the top and bottom of the joint. Water is then pumped into the bottom outlet until it flows out of the top outlet, at which time the iron pipe plug or a temporary shutoff valve is placed in the top outlet. The pressure is then pumped up to the required level and maintained at this level for at least three minutes. The design working pressure for proposed pipe is 250 psi. If any leakage occurs to the inside of the pipe, indicating a leak past the standard laying gasket, the joint should be remade. Leakage only to the outside of the pipe, indicating a leak past the test gasket, should not require the joint to be remade so long as the pump can maintain the test pressure for the required length of time to verify the water tightness of the standard laying gasket. After the test is completed, the connections are removed and the water should be forced from the joint. The iron pipe plugs are then replaced in both the top and bottom outlets using pipe dope on the threads. Before the line is put in service, the iron pipe plugs should be mortared over to blend with the inside surface of the pipe.

When joint testing is carried out in freezing weather, use of an anti-freeze may be desirable. Both Prestone and Phillips 66 brands of anti-freeze have been tested and found to have no effect on the rubber gasket material.

9. **Chlorination and Sterilization.** The contractor shall flush and sterilize all new piping before being placed in service. All piping shall be thoroughly cleaned, flushed and sterilized in accordance with AWWA Standard C651-86, and American Water Works Association Standards for disinfecting water mains. The contractor shall supply all labor, materials, and equipment for sterilization and flushing. Following chlorination and flushing of the newly laid pipe line at its extremities and when the entire length of line is ready for service, the contractor shall notify the Engineer 24 hours in advance so that samples of water can be obtained from the extremities of the newly laid pipe line for bacteriological tests. No samples shall be taken from hydrants but shall be taken from riser pipe on corporation stops furnished and installed by the contractor. Riser pipes shall also be sterilized and flushed. If results of sterilization and flushing are not satisfactory as determined by laboratory tests, the contractor will repeat the above procedure as many times as is necessary until such tests are approved.

During the chlorination process all valves and accessories shall be operated. After chlorination, the water shall be flushed from the lines at the extremities until replacement water tests are equal chemically and bacteriologically to those of the permanent source of supply.

Method of Measurement.

The 1200mm prestressed concrete cylinder pipe will be measured by the linear meter.

The 1200mm Butterfly Valves, and Prestressed Concrete Cylinder Pipe Closure Fittings will be measured by the number of each.

Basis of Payment.

Payment will be made under:

<i>Pay Item</i>	<i>Pay Unit</i>
1200MM PRESTRESSED CONCRETE CYLINDER PIPE WATER MAIN	LINEAR METER
PRESTRESSED CONCRETE CYLINDER PIPE CLOSURE FITTINGS	UNIT
1200MM BUTTERFLY VALVES	UNIT

No separate payment will be made for tests called for in these specifications. The cost of testing shall be included in the bid price for the 48inch (1200mm) prestressed concrete cylinder pipe.

No separate payment will be made for temporary sheeting, the cost of which shall be included in the bid price for 48inch (1200mm) prestressed concrete cylinder pipe.

No separate payment will be made for the eccentric reducer needed at the westerly end on Pipe No. 2, the cost of which shall be included in the bid price for 48inch (1200mm) prestressed concrete cylinder pipe.

No separate payment will be made for the manway to be included in each closure fitting, the cost of which shall be included in the bid price for Prestressed Concrete Cylinder Pipe Closure Fittings.

Payment for test pits shall be as provided for in Section 207 of the Standard Specifications.

TRANSMISSION WATER MAIN (PASSAIC VALLEY WATER COMMISSION)

Description.

The existing Passaic Valley Water Commission Water Main must be replaced before Ramp C and D embankment can be constructed over the pipes. This work shall consist of construction of 1350mm (54inch) steel water pipe; 1200mm (48inch) resilient seat gate valves with eccentric reducers, to be inserted into the existing 1295mm (52inch) riveted steel water pipe; 1350X400mm (54inch X 16inch) tee connection to the New Jersey American Water Company; and tie-ins including eccentric reducers and manway at each end of the new pipe.

The location and depth of existing transmission water mains shown on the plans and profiles is based upon water company record maps and limited information from vacuum extraction test pits. The location and depth are approximate. The contractor shall excavate test pits at each connection to existing pipe and at locations in between, to accurately locate and measure the pipe before ordering materials.

The contractor is advised that tie-in locations are approximate and may have to be adjusted to avoid circumferential rivet seams. Also, due to the age of the pipes, the pipe cross section is probably not circular. Tie-ins must accommodate any out-of-roundness that is found.

Two extra sets of shop drawings and laying schedules shall be provided to the Passaic Valley Water Commission for their information and records. The Passaic Valley Water Commission will communicate with the Engineer if they have any objections to the shop drawings or laying schedules.

1. Design Conditions

Pipe and fittings shall be designed by the pipe supplier, in accordance with AWWA C200, C205, & C214 for the diameter, to meet the operating pressure, surge allowance, vacuum, test, pressure, live load, dead load and bedding condition listed as follows:

Diameter	1350 mm (54 inch)
Operating Pressure	150 psi
Surge Pressure	100 psi above operating Pressure
Vacuum	-14.7 psi
Test Pressure	250 psi
Live Load	AASHTO MS 18 + 25% (MS 22.5) or tandem 108 kN axles at 1.200 meter spacing, whichever governs
Dead Load	1.2 meters to 5.5 meters earth cover
Trench Load	Width OD + 900 millimeters
Bedding Condition	Type 3 AWWA C151

Material.

1. Pipe

All steel pipe furnished under this contract shall be cement mortar lined, tape coated steel water pipe designed in accordance with AWWA Manual M11 and this specification, and manufactured to the standards of AWWA C200, C205, and C214. All pipe shall be manufactured new for this project from domestic materials, no pipe from inventory shall be acceptable. Minimum design parameters shall be as listed in Section 1.02 of this specification and shall include the following special provisions.

Pipe shall be fabricated from plate, sheet or coils as listed in the latest revision of AWWA C200. All pipe and fittings shall be supplied with a minimum wall thickness of 0.50inches (12.5mm) and meet the material and chemical requirements of ASTM A139. A design stress equal to 50% of the specified minimum yield stress at working pressure and 75% of the specified minimum yield stress at working pressure plus surge shall not be exceeded in the design. Standard laying lengths may be the fabricators standard length pipe, however no pipe shall be furnished in excess of 50ft (16.67met). The lining shall conform to the latest revision of AWWA C205 for cement mortar linings. The nominal diameter of cement mortar lined pipe shall be the I.D. after lining.

The pipe shall be coated and wrapped outside with a prefabricated multi layer cold applied polyolefin tape coating in accordance with AWWA C214.

Bell and Spigot field welded joints shall be used. Connections to valves shall be made by flange joint, flanges shall be AWWA C207 class E drilled to match ANSI B16.1 class 125 cast iron flanges.

2. Fittings

All fittings including bends, tees, wyes, reducers and pipe with outlets branches as shown on the contract drawings shall be designed according to AWWA M11 and manufactured in accordance with AWWA C200, C205, C208 and C209. All fittings and specials shall be manufactured new for this project from domestic materials, no fittings or specials from inventory shall be accepted. Minimum design parameters shall be as listed in Part 1 of this section and shall include the following special provisions.

- A. Fittings shall be fabricated from straight pipe manufactured for this project and tested to meet the requirements of AWWA C200, and this specification. Fittings fabricated from previously hydrostatically tested straight pipe shall require testing of only those welded seams not previously hydrostatically tested. Tests of those welds shall be by dye penetrant, magnetic particle, ultrasonic or x-ray. All pipe and fittings shall be supplied with a minimum wall thickness of 0.50" (12.5mm). Design stresses equal to 50% of yield at working pressure and 75% of yield at surge shall not be exceeded.
- B. Cement mortar linings shall conform to AWWA C205. The nominal diameter of the cement mortar lined fittings shall be the I.D. after lining. The minimum thickness of the lining shall be 3/8" (10mm) for all pipe diameters.
- C. Fittings shall be coated and wrapped outside with a prefabricated multi-layer cold applied polyolefin tape coating in accordance with AWWA C209.
- D. The standard joint for fittings shall be bell and spigot field welded joints, which shall be used as restrained joints.

3. Coatings.

A. Pipe.

Pipe shall be coated and wrapped at the fabricators plants with a prefabricated multi-layer cold applied polyolefin tape conforming to the coating system described in AWWA C214. The system shall consist of surface preparation, a primer, a 20 mil inner layer for corrosion protection and two 30 mil outer layers. The pipe surface shall be free of mud, mill lacquer, wax, coal tar, asphalt, oil, grease or any other foreign material prior to blast cleaning. Pipe surface shall be grit blasted to a commercial surface conforming to SSPC SP6 or NACE TM 01-75. Pipe surface shall be visually inspected after abrasive blasting and before primer application to assure adequate surface preparation. A suitable primer meeting the requirements of AWWA C214 shall be applied to the prepared pipe surface in a thin uniform film at a coverage rate recommended by the primer manufacturer. An inner-layer tape meeting the requirements of AWWA C214 shall be applied directly to the primed pipe surface with mechanical coating and wrapping equipment. The inner-layer tape shall be spirally applied with overlap, width and application tension as recommended by the tape manufacturer. The inner-layer shall be electrically tested for flaws in the coating with a holiday tester and repaired as required prior to the application of the outer tape coats. Two outer tape coats conforming to the requirements of AWWA C214, each consisting of a 30 mil thick cold applied polyolefin tape with a laminated adhesive backing, shall be applied over the inner-layer tape with the same type of mechanical equipment used to apply the inner-layer tape. The seams and overlaps of the outer-layer tapes shall not coincide with the seams and overlaps of previously applied tape coats. The outer layer tape shall be spirally applied with overlap width and application tension as recommended by the tape manufacturer.

B. Fittings.

Fittings shall be coated and wrapped at the fabricator's plant with a multi layer cold applied polyolefin tape conforming to a Type II system described in AWWA C209. The system shall consist of surface preparation, a primer and two 35 mil outer-layers. The fitting shall be free of mud, mill lacquer, wax, coal tar, asphalt, oil, grease or any other foreign material prior to blast cleaning. Fittings surfaces shall be grit blasted to a commercial surface conforming to SSPC SP6 or NACE TM-01-75. Fitting surface shall be visually inspected after abrasive blasting and before primer application to assure adequate surface preparation. A suitable primer meeting the requirements of AWWA C209 shall be applied to the prepared fitting surface in a thin uniform film at a coverage rate recommended by the primer manufacturer. Applied directly to the primed surface shall be two outer-layer tape coats conforming to the requirements of AWWA C209, Type II tape coating system. The specific application procedure used or the Type II tape-coating systems shall be as recommended by the coating manufacturer.

Between applications of the two outer-layer coatings the fabricator shall electronically test the surface of the fitting with a holiday tester, and repair any defects as required, prior to applying the second tape coats. The seams and overlaps at the second tape coat shall not coincide with the seams and overlaps of the first coat.

4. Linings.

The inside of all pipe and fittings shall receive a cement mortar lining with a minimum thickness of 3/8" (10mm), and a minimum 28-day compressive strength of 4500psi (31,026kPa). Pipes shall be lined by centrifugal spinning, or by a method known to provide similar results, fittings shall be lined by hand troweling mechanically or pneumatically placed mortar. Cement mortar linings shall conform to AWWA C205. Cement mortar shall be composed of ASTM C150 Type I or Type II cement, sand meeting the requirements of ASTM C33 and clean water free of injurious quantities of impurities that would adversely affect the quality of the mortar. Pozzolans or fly ash shall not be used as a cement replacement for the mortar mix. Admixtures for mortar may be used to control setting time and as a water reducing agent, however, the fabricator shall submit the brand name of the admixture and amounts to be used with the mortar mix design for approval. Any admixture containing chlorides will not be allowed. Prior to the application of the mortar lining inside surface of the pipe and fittings shall be free of mud, mill lacquer, wax, coal tar, asphalt, oil, grease or any other foreign substance that will affect the mortar bond to the steel pipe. Inside surface shall be grit blasted to a commercial surface conforming to SSPC SP6 or NACE TM 01-75. Curing of mortar lining shall begin immediately after lining placement is complete. Delaminating, blisters, sand pockets, voids, spalls due to impact or any other defect in the lining shall be repaired in accordance with AWWA C205. Temperature and shrinkage cracks in the lining less than 1/16" (1.56mm) in width need not be repaired. Lining defects involving more than 1% of the surface area of the lining or cracks greater than 1/16" (1.56mm) in width may be grounds for rejection of the pipe or fittings.

5. Joints.

Joints for cement mortar lined, tape coated water pipe shall be field welded bell and spigot. Joints for fittings shall be field-welded bell and special flanged joints shall be furnished as required for line valve connections, air and vacuum release valves, interconnections and other special situation shown on the plans. All joints shall be designed and manufactured in accordance with AWWA C200, C206, C207 and C208. Welded bell and spigot joints shall be furnished prepared and ready for welding with coatings and linings held back as required for proper welding. The pipe fabricator to wrap and protect all field-welded joints shall supply sufficient field tape coating materials. The parts of the joint that are uncoated and unlined shall be protected from corrosion by an appropriate coating for temporary or permanent service as required.

A. Field Welded Joints.

Field welded bell and spigot joints shall be used. The standard bell shall provide a 2 1/4" (56.25mm) lap and a 3/4" (19mm) pull for the required 1 1/2" (37.5mm) minimum lap. Welded joints shall be supplied ready for welding, the outside tape coating and the inside cement mortar lining shall be held back 4 1/4" (106.25mm) from the bell and spigot ends. A factory applied rust inhibitive coating shall be applied to all un-mortared and untapped bells and spigot as protection from corrosion until field coatings and linings are applied. Sufficient field coating materials shall be supplied by the PIPE FABRICATOR to wrap and protect each joint.

B. Flanged Joints.

Where flanged joints are required they shall conform to the standards of AWWA C207 for ring or hub flanges. All flanges shall be rated for 250psi. Flanges shall be Class E and have the same dimensions and drillings as ANSI B16.1 Class 125 cast iron flanges. Gaskets shall be full-faced red rubber 1/8" (3.175mm) thick. All bolts and nuts for flanged joints shall be stainless steel ASTM A304, with hex head dimensions in accordance with ASTM B18.2.1 and B18.2.2 with ANSI B1.1 and B1.2 coarse threads Class 2A and 2B. Cement mortar lining shall be brought to the end of the pipe, tape coating shall be brought to the back of the flange. Parts of the flange that will be permanently exposed shall be protected from corrosion by an appropriate coating approved for use by the Engineer.

6. Valves.

Gate valves shall be resilient seat gate valves that conform to AWWA Resilient Seated Gate Valve Standard C-509 and shall be UL listed, FM approved. Valves shall be non-rising stem, direct burial lay-down type valves that have gates that move horizontally. Valve operating stems shall be geared to turn about a vertical axis, and shall OPEN RIGHT. Valves shall be equipped with a built-in bypass, minimum 100 mm (4 inch) diameter.

All internal parts shall be accessible without removing the valve body from the water main.

The wedge shall be cast iron, completely encapsulated with resilient material. The resilient sealing material shall be permanently bonded to the cast iron wedge with a rubber tearing bond to meet ASTM D429. Stems shall be cast bronze with integral collars in accordance with AWWA. The stuffing box shall have two O-Ring seals above the thrust collar and one below the thrust collar. The top two O-Rings shall be field replaceable without removing the valve from service.

The valve stem shall be equipped with low friction thrust collars above and below the stem collar. The stem nut shall be independent of the wedge and shall be solid bronze. The waterway in the seat area shall be smooth, unobstructed, free of cavities and at least 5 mm greater in diameter than the nominal valve size.

The body and bonnet shall be coated both interior and exterior with a fusion bonded heat cured thermo setting material meeting all the application and performance requirements of AWWA C-550.

Each valve shall be hydrostatically tested to the requirements of both AWWA and UL/FM and shall be rated for 250 psi AWWA service.

Valve joints shall be mechanical joint conforming to AWWA C-111, and shall be restrained.

Construction Requirements.

1. Installation

Install piping as shown, specified and according to the recommendations of the manufacturer. Trenching and back filling required for pipe laying is specified in Section 207. Pipe shall be laid to the line and grade shown on the Contract Drawings, deviation to avoid unanticipated obstructions shall be only by approval of the Engineer. Slope pipe uniformly between elevations. Place pipe so bells face the direction of laying. The pipe shall be handled carefully at all times so as not to damage the tape coat and mortar lining. All pipes shall be lifted with a spreader bar and two nylon slings placed at the third points; wire rope, chains and unpadded metal handling equipment are unacceptable. When the pipe is unloaded or strung along the line of work it shall be blocked off the ground with padded blocks, sand bags, or mounds of sand to protect the pipe coating. The pipe shall not be rolled dragged or skidded along the ground at any time. When placing the pipe in the trench, the pipe shall remain suspended until the joint is pushed home to avoid skidding the pipe on the bedding. Once the joint is made the pipe shall be lowered and firmly bedded for the full length of the pipe barrel. Blocking under the pipe shall not be permitted. Bell holes in the pipe bed material shall be excavated to facilitate pipe bedding and joint preparation. No pipe shall be brought into position until the preceding length has been secured in the pipe envelope. Defective materials shall be immediately removed from the site, any pipe, fitting or accessory found to be broken or defective after it has been installed shall be removed and replaced at no cost to the State. A watertight pipe plug or bulkhead shall be provided and used to prevent the entrance of foreign material whenever pipe-laying operations are not in progress. Valves shall be placed on a bed of compacted dense graded aggregate, 300 mm thick, to eliminate settlement.

2. Pipe Cuttings

The field cutting of steel pipe shall not be allowed unless unanticipated changes in the alignment or location of valves and fittings must be made. The CONTRACTOR shall receive approval of the Engineer before making such changes. Field cutting when authorized shall be done neatly removing only as much coating and lining as is necessary to make the cut. The end cut whether square or beveled shall be made accurately by flame cutting or sawing.

3. Joints.

A. Field Welded Joints.

Field welded joints shall be in accordance with AWWA C206 and this specification. All welders used to install pipe shall be certified pipe welders pre-qualified under the provisions of AWS D1.1, welding procedures for field welded joints. Qualifications of welders shall be submitted to the Engineer for approval, and to the Passaic Valley Water Commission for their records and information. Unless double fillet welds are shown on the contract drawing or laying schedule, field welded lap joints shall be made on the outside of the pipe. During the installation of welded steel pipe in either straight alignment or on curves, the pipe shall be laid so that at any point around the circumference of the joint there is a minimum lap of one inch. Prior to welding any tack welds used to position the pipe during laying shall be removed. Any annular space between the laying surfaces of the bell and spigot shall be evenly distributed around the circumference of the joint by shimmying, jacking, or other suitable means. The CONTRACTOR shall include in the welding procedure his method for controlling thermal stresses. After the welding of each joint all field-welded joints shall be inspected by the use of a dye penetrant conforming to ASTM E165, Method B, or a magnetic particle test. Joints showing defective welds shall be repaired according to AWWA C206 at no additional cost to the State. Following testing of the joints the exterior of the joint shall be tape coated and the interior mortar lined in accordance with these specifications.

B. Flanged Joints.

Assemble flanged joints with approved full faced red rubber gaskets 1/8 inch thick. Clean flange faces thoroughly before making the joint. Draw up flange bolts evenly and alternately across flange until the joint is tight. Bolts shall be uniform length, take up the full nut but not project more than ¼ inch past the nut.

4. Joint Coating.

The exterior surface of the joints shall be thoroughly cleaned of loose scale, dirt, and other foreign material. Joints on tape-coated pipe shall be primed and wrapped with 2 thickness of elastomeric joint tape Type II according to AWWA C209. The total thickness of the field applied tape wrap shall be 70 mils and shall be free of wrinkles and air pockets with all laps fully bonded. All primer and tape shall be compatible with the pipeline coating and supplies by the PIPE FABRICATOR. Joint tape shall be applied with a mechanical tape dispenser supplied with the tape. After application all field-coated joints shall be tested with an electric holiday detector capable of at least a 12000-volt output. Any holiday found shall be repaired by the CONTRACTOR at no cost to the State. Except where otherwise noted all joints shall be bonded in accordance with this specification prior to field joint coating application.

5. Joint Lining.

The interior surface of the joints shall be thoroughly cleaned of loose scale, dirt and other foreign material. The cement used for internal field joint mortar shall be the same type used for the shop lining, ASTM C150 Type I or II. After the backfill has been completed to final grade, the interior joint recess shall be filled with mortar of stiff consistency mixed in proportions of one part cement to two parts sand. Mortar shall be tightly packed into the joint recess and troweled flush with the interior surface, at no point shall there be an indentation or projection of mortar exceeding 1/16 inch.

A. Joint Bonding.

Prior to field wrapping the joint, all o-ring gasket joints shall be bonded in the field, welded joints need not be bonded. At the point of bonding wire attachment to the pipe clean the pipe surface to bright bare metal, attach the #4 bare copper wire by thermal welding.

6. Chlorination And Sterilization.

The contractor shall flush and sterilize all new piping before being placed in service. All piping shall be thoroughly cleaned, flushed and sterilized in accordance with AWWA Standard C651-86, and American Water Works Association Standards for disinfecting water mains. The contractor shall supply all labor, materials, and equipment for sterilization and flushing. Following chlorination and flushing of the newly laid pipe line at its extremities and when the entire length of line is ready for service, the contractor shall notify the Engineer 24 hours in advance so that samples of water can be obtained from the extremities of the newly laid pipe line for bacteriological tests. No samples shall be taken from hydrants but shall be taken from riser pipe on corporation stops furnished and installed by the contractor. Riser pipes shall also be sterilized and flushed. If results of sterilization and flushing are not satisfactory as determined by laboratory tests, the contractor will repeat the above procedure as many times as is necessary until such tests are approved.

During the chlorination process all valves and accessories shall be operated. After chlorination, the water shall be flushed from the lines at the extremities until replacement water tests are equal chemically and bacteriologically to those of the permanent source of supply. As an alternative, the contractor may use spray disinfection conforming to AWWA standards for tank disinfection. Minimum concentration of chloride solution shall be 200 ppm.

7. Sequence And Schedule.

The allowable period for the shut down of main for the construction is between October 1 and May 1. Work on the Passaic Valley Water Commission transmission water main can only commence when both City of Newark transmission water mains are in service. The number of days that the transmission water main is shut down is critical to the utility owner. Two shut downs will be necessary. The first shutdown will be for a maximum of 48 hours for installation of both 1200 mm Resilient Seat Gate Valves and Boxes. The second shutdown will be for construction of the pipe and construction of the tie-ins at both ends of each pipeline and shall be accomplished within a 7-day period. The contractor shall mobilize as many crews as necessary and work continuously on a 24-hour basis, even if he is ahead of schedule, in order to complete the tie-ins and have the pipeline ready for the utility company to place it back in service. Included in this 7 day period shall be the joint testing for leaks, chlorination and sterilization and satisfactory water analyses.

Before the mains are put in service, the trenches shall be properly backfilled and secured to the satisfaction of the Engineer.

Should there be any delays in the tie-in construction and or in placing the relocated main in service expeditiously, the contractor will be held responsible for system damage. After the 7th day of the second

shutdown, the utility company will be forced to obtain water from the other major water purveyors. The Contractor shall be responsible for the purchase of water at a rate of \$40,000.00 per day.

Method of Measurement.

The 1350 mm Heavy Gauge Steel Pipe Water Main will be measured by the linear meter.

The 1350 mm Heavy Gauge Steel Pipe Closure Fittings, 1350 by 400 mm Tees, and 1200 mm Resilient Seat Insertion Gate Valve and Boxes will be measured by the number of each.

Basis of Payment.

Payment will be made under:

<i>Pay Item</i>	<i>Pay Unit</i>
1350 MM HEAVY GAUGE STEEL PIPE WATER MAIN	LINEAR METER
1350 MM HEAVY GAUGE STEEL PIPE CLOSURE FITTINGS	UNIT
1350 BY 400 MM TEES	UNIT
1200 MM RESILIENT SEAT GATE VALVES AND BOXES	UNIT

No separate payment will be made for tests called for in these specifications. The cost of testing shall be included in the bid price for the 1350 mm Heavy Gauge Steel Pipe Water Main.

No separate payment will be made for temporary sheeting, the cost of which shall be included in the bid price for 1350 mm Heavy Gauge Steel Pipe Water Main.

No separate payment will be made for the eccentric reducers, the cost of which shall be included in the bid price for 1350 mm Heavy Gauge Steel Pipe Water Main.

No separate payment will be made for the manways to be included in each closure fitting, the cost of which shall be included in the bid price for 1350 mm Heavy Gauge Steel Pipe Closure Fittings.

Payment for test pits shall be as provided for in Section 207 of the Standard Specifications.

DISTRIBUTION WATER MAINS (NEW JERSEY AMERICAN WATER COMPANY)

Description.

This work will consist of construction of water mains, valves, house connections, chambers, and a connection to the Passaic Valley Water Commission transmission water main.

Materials.

New Jersey American Water Company (NJAWC) will supply all piping materials including valves, fittings, valve boxes, service material, rodding, etc. Water Company should be notified at least 9 weeks prior to work to allow for material ordering.

Contractor will supply any casing pipe needed, all backfill material, concrete for thrust restraint, all temporary pavement and sidewalk restoral, all lawn and shoulder restoral, etc. as well as all means, methods, labor, equipment, etc., necessary to perform the installations. Backfill shall be dense graded aggregate, complying with Section 901.08.

Below is a list of materials and fittings that meet current NJAWC standards, and will be supplied by NJAWC for the Contractor to install:

1. Pipe-Class 350 Tyton joint DI double cement lined with paint seal coat and tar coated on the outside (restrained pipe to be FIELD LOK Gasket or Griffin SNAP LOCK joint).
2. Fittings-Class 350 DI MJ double cement lined with paint seal coat and tar coated on the outside.
3. Gate Valves (incl. Tapping valves)-MJ iron body resilient seated valves with non-rising stem and epoxy coated (Mueller 2360-20 and T2360-16 or equivalent).
4. Hydrants-Mueller A-423 model, 5¼" (131mm) valve opening with a 6" (150mm) branch, traffic model dry barrel hydrant with two 2½" (63mm) hose nozzles, and one steamer nozzle. Must meet Township thread and nut specifications.
5. Tapping sleeves-Iron body with asphalt tar varnish, Mueller H-615 or equivalent.
6. Valve boxes-5 ¼" (131mm) cast iron slide type.
7. Curb boxes-2 ½" (63mm) plastic slide type (without rod).
8. Copper tubing-1" Type L soft copper or 2" (50mm) Type K soft copper.
9. Service fittings-all brass fittings with copper flare connections including non-draining ¼ turn ball valves (Mueller threads on corporations).
10. Retainer glands-Wedge styles, such as Ford series 1400 wedge action or Mega-lug series 1100 wedge actions, or equivalents. (Thrust restraint using concrete blocking is acceptable, however we normally prefer

restrained joints on the pipe for the required distance around MJ fittings with wedge style retainer glands used on those MJ fittings).

All services from the main to the curb shut off will be either 1" (25mm) type L soft copper, or 2" (50mm) type K soft copper. All fittings should be flare type. All stops shall be flare type ¼ turn ball valve with T shut off. Curb stops shall be non-draining. No meter pits shall be allowed without prior approval.

Air releases and flushing points will be 2" (50mm) brass fittings with 2" (50mm) Iron outlet corps and 2" (50mm) Iron X outlet curb stops.

Construction Requirements.

1. Qualified Contractors.

Contractors or their sub-contractors performing work on NJAWC water facilities must be pre qualified by NJAWC. The list of prequalified NJAWC contractors follows:

Aponte Construction Company
P.O. Box 925
Plaza 31 – 179 Route 31
Flemington, NJ 08822
Office (908) 788-4046
Fax (908) 788-9446

H. W. Alward, Inc.
161 Mount Airy Road
Bernardsville, NJ 07924
Office (908) 766-0063
Fax (908) 766-0472

Henkels & McCoy, Inc.
1300 West Blancke Street
Linden, NJ 07036
Office (908) 474-0500
Fax (908) 474-0644

J & C General Excavating Company, Inc.
2526 Springfield Avenue
Vauxhall, NJ 07088
Office (908) 686-3770
Fax (908) 688-1147

Northeast Construction, Inc.
P.O. Box 2040
100 Route 70
Lakewood, NJ 08701
Office (908) 364-8200
Fax (908) 905-8559

Brian Plushanski Construction
352 Strotz Road
Asbury, NJ 08802
Office (908) 735-9726
Fax (908) 735-8061

R & R Construction Company, Inc.
105B Parker Road
Chester, NJ 07930-9533
Office (908) 879-5122
Fax (908) 879-6390

Vollers Excavating and Construction, Inc.
P.O. Box 5297
3311 Route 22

North Branch, NJ 08876
Office (908) 725-1026
Fax (908) 725-9784

2. General.

All materials shall be installed as per the manufacturers' recommendations, the American Water Works Association (AWWA), and the Ductile Iron Pipe Research Association's, (DIPRA), recommendations. The contractor shall be responsible for the disposal of all chlorinated water and conformance to all regulations governing this disposal.

Only workers experienced in this type of work shall carry out tapping of water mains and associated connection work.

3. Transportation.

Pipe, fittings, valves and other accessories shall, unless otherwise directed by the Engineer, be transported to the site of the project by the Contractor and shall, at all times, be handled with care to avoid damage. Damage includes contamination of the material caused through contact with harmful substances. In loading and unloading material shall be lifted by hoists or slid, or rolled on skidways in such manner as to avoid shock. Under no circumstances shall material be dropped. Pipe shall be transported in a horizontal position and supported properly so that the weight of the pipe does not rest on either the bell or spigot. In distributing the material at the site of the work, each piece shall be unloaded opposite or near the place where it is to be laid in the trench. Pipe shall be placed on the site of the work parallel with the trench alignment and with bell ends facing the direction in which the work will proceed, unless otherwise directed. The interior of all pipe, fittings, and other accessories shall be kept free from dirt and foreign matter at all times.

4. Hydrants.

Hydrants shall be set plumb, with the steamer nozzle facing the roadway and the break flange no higher than 6inch (150mm) from the top of the flange above finished grade, unless otherwise directed by the Engineer. Each hydrant shall be installed with a 6inch (150mm) branch and gate valve. The branch consists of the standard tee, valve and all piping from the existing main to the hydrant. The hydrant, pipe, valve and fittings shall be restrained using tie rods; concrete thrust blocking and/or retaining glands as directed by the Engineer. A drainage pit, measuring 2' x 2' x 2' (0.6meter x 0.6meter x 0.6meter) under and around the hydrant, and the drains shall be excavated and filled with ¾" (19mm) clean stone to a level 6inch (150mm) above the drains. The Contractor shall supply all excavation, hauling material, required select backfill material, backfill compaction, shoring, dewatering, thrust restraint, anchorage, all site restoration, and the removal and disposal of existing hydrants, for the installation of new hydrants as directed by the Engineer.

5. Reaction or Thrust Blocking.

Reaction or thrust backing shall be applied on all tees, plugs, caps, and at bends deflecting 5 degrees or more, or movement shall be prevented by attaching suitable metal rods or straps, and retainer glands or megalugs as directed by the Engineer.

Reaction or thrust backing shall be of concrete of a mix not leaner than 1 cement, 2 ½ sand, 5 stone, having compressive strength of not less than 2000psi (13,790kPa). Backing shall be placed between solid ground and the fitting to be anchored; the area of bearing on pipe and on ground in each instance shall be that required by the Engineer. The backing shall, unless otherwise directed, be so placed that the pipe and fitting joints will be accessible for repair.

Metal harness of tie rods and pipe clamps of adequate strength to prevent movement, or other suitable means, may be used instead of concrete backing, as directed by the Engineer. Steel rods and clamps shall be galvanized, or otherwise rustproof treated, or shall be painted as directed by the Engineer.

6. Cleaning & Inspection Of Ductile Iron Pipe.

The inside of pipes and casting shall be thoroughly cleaned before laying and shall be kept clean until accepted in the completed work. Whenever the work is interrupted, plugs shall temporarily close all open ends of pipe. All pipes and special castings shall be carefully examined for defects, and no pipe or special casting shall be laid which is known to be defective. After being laid, it shall be removed and replaced with a sound pipe or casting by the Contractor at his own expense.

7. Laying Ductile Iron Pipe.

Pipe shall be laid to conform to the lines and grades shown on the plans or as directed by the Engineer. Each bell and spigot shall be cleaned with a wire brush and each spigot shall be centered in the bell and the end of the spigot will be tight against the seat of the bell, or at the distance from the seat of the bell shown on the plans, in which position it shall be held until the joints is completed. Each length of pipe and fitting shall be firmly supported on good foundation and adequate means must be taken to prevent settlement.

The pipe shall be carefully lowered into the trench by means of slings or other approved tools or equipment in such a manner as to prevent damage to the pipe or its protective coating. Under no circumstances shall the pipe be dropped or dumped into the trench.

The inside of the bell and the outside spigot end shall be thoroughly cleaned to remove oil, grit, and other foreign matter. After placing the rubber joint ring, a thin film of gasket lubricant shall be applied to the bell and spigot ends of the pipes to be joined. Lubricant shall be as supplied by the pipe manufacturer and approved by the Engineer. The spigot end of the pipe shall be entered into socket with care used to keep the joint from contacting the ground. The pipe shall then be forced home by approved methods and brought to correct line and grade. Pipe shall be laid with bell ends facing in the direction of laying. Pipe shall be laid to conform to the lines and grades shown on the plans or as directed by the Engineer.

8. Testing.

After the pipe has been laid and backfilled to the surface of the ground, all newly laid pipe or any valve section thereof shall be subjected to a hydrostatic pressure test in the amount of 200psi (1.38MPa). The Contractor in the presence of the Engineer shall conduct the test. The duration of each pressure test shall be at least two hours. Each valved section of pipe shall be slowly filled with water and the specified test pressure shall be applied by means of a pump connected to the pipe in a manner satisfactory to the Engineer. The contractor shall furnish pump, pipe connection, gauges and all necessary apparatus. Any expense incurred in providing temporary closures shall be included in the unit price bid for Ductile Iron Water Pipe. Before applying the specified test pressure all air shall be expelled from the pipe. If hydrants or air relief are not available at high places, the Contractor shall make the necessary taps at points of highest elevation before the test is made and insert the plugs after the test has been completed. All exposed pipes, fittings, valves, and joints will be carefully examined during the open trench test. Any cracked or defective pipes, fittings or valves discovered as a consequence of this pressure test shall be removed and replaced by the Contractor with sound material and the test shall be repeated until satisfactory to the Engineer.

A leakage test shall be conducted after the pressure test has been satisfactorily completed. The duration of each leakage test shall be two (2) hours, and during the test the main shall be subjected to a pressure of 150psi (1.03MPa).

Leakage is defined as the quantity of water to be supplied into the newly laid pipe, or any section thereof, necessary to maintain the specified leakage test pressure after the pipe has been filled with water and the air expelled.

The maximum allowable leakage for the pipe will be determined by the formula:

$$L = \frac{SD(P)^{1/2}}{133,200}$$

Where L is the allowable leakage in gallons per hour, S equals the length of pipe in feet, D is the nominal pipe diameter in inches and P is the test pressure in PSIG.

Should any test of pipe laid disclose leakage greater than that specified, the Contractor should, at his own expense, locate and repair the defective joints, pipe valves, or fittings until the leakage is within the specified allowance.

9. Disinfection.

The Contractor shall disinfect all water piping in accordance with AWWA standard for "disinfecting water mains" designation C-601. Commercial products such as "HTH", "Perchloron", and "Maxochlor" may be used in flake or crystal form, but in no instance will tablets be permitted to be used in the disinfection of the water mains. Disinfection of water mains shall be continued until water samples taken from the pipe are satisfactory to the Engineer. Approved sampling taps shall be provided at points designated by the Engineer.

The chlorine dosage shall initially produce 50ppm residual to the water and maintain a minimum residual of 25ppm after 24 hours. The bacteriological examination will be conducted at the expense of the Contractor by a licensed bio analytical laboratory. After satisfactory disinfection of the test section, the line shall be continuously flushed until the resultant chlorine residual equals 1ppm or the residual of the system, whichever is greater. The Contractor is to present the results of all laboratory examinations to the Engineer immediately as they become available.

10. Fittings and Specials.

All horizontal and vertical bends greater than 5 degrees shall be properly harnessed with concrete thrust blocks and/or steel tie rods.

Ties rods shall be 3/4" (19 mm) steel rod with malleable iron couplings. Pipefittings shall be tied with two (2) rods per joint, minimum, or as required by the Engineer. Details of tied joints shall be submitted to the Engineer for approval.

Tie rods and couplings shall be given one heavy coat of bitumastic paint immediately after final assembly.

Where connections are made to existing mains without tapping sleeves (wet taps), the Contractor shall notify the Engineer, who in turn will notify New Jersey American Water Company, a minimum of 72 hours in advance and shall coordinate shutdown procedures with New Jersey American Water Company. New Jersey American Water Company shall operate isolation valves to shutdown the area under construction and shall open a hydrant in the work section to depressurize the main before any construction.

Method of Measurement.

Ductile Iron Water Pipe (NJAWC Supplied) of the various sizes will be measured by the linear meter, including all bends.

Gate Valves and Boxes (NJAWC Supplied) of the various sizes will be measured by the Unit.

Tees (NJAWC Supplied) of the various sizes will be measured by the Unit.

Fire Hydrant Assemblies (NJAWC Supplied) will be measured by the Unit.

House Service Connections (NJAWC Supplied Materials) will be measured by the Unit.

Basis of Payment.

Payment will be made under:

<i>Pay Item</i>	<i>Pay Unit</i>
___ MM DUCTILE IRON WATER PIPE (NJAWC SUPPLIED)	LIN METER
___ MM GATE VALVES AND BOXES (NJAWC SUPPLIED)	UNIT
___ FIRE HYDRANT ASSEMBLIES (NJAWC SUPPLIED)	UNIT
___ HOUSE SERVICE CONNECTIONS (NJAWC SUPPLIED MATERIALS)	UNIT

INSTALLATION OF GAS MAINS AND APPURTENANCES

Description.

The work for these items shall consist of the Contractor hiring a prequalified gas Subcontractor to perform the work as specified within. For these items of work Subcontractor shall mean any of the qualified gas contractors listed under the construction requirements noted below and hired by the Contractor to perform the installation of gas mains and appurtenances for the gas utility company.

However, the Contractor shall perform construction layout, traffic control, sawcutting, pavement removal, removal of excess gas, excavation unclassified, temporary pavement, final pavement restoration, sidewalk or landscape restoration as necessary for this project.

This actual work shall consist of the construction of new gas lines, valves, vents, and appurtenances. The Subcontractor shall furnish all supervision, labor, tools and equipment to pick up and/or unload pipe, fittings and miscellaneous materials supplied by Public Service Electric and Gas Company (PSE&G). The Subcontractor shall excavate, sheet and dewater excavations, place and tamp backfill. The Subcontractor shall place backfill up to the bottom of the proposed pavement, sidewalk or in a landscape area the bottom of topsoil. The Subcontractor shall fabricate, weld, lay, pig pipe and internally clean pipe. The Subcontractor shall also clean, sandblast, coat and wrap all buried pipe and joints, perform an air test, pour concrete pads for valves and line stops.

This work shall also include the Subcontractor assisting PSE&G crews to perform cutout, hot taps, line stops and make gas main tie-ins. Any material, equipment, or related work required for the completion of the pipe installation which is not indicated or specified herein, shall be provided at no additional cost. This shall also include the placement and removal of any temporary fencing or steel plates used to keep any gas excavation open overnight.

This work may also consist of the excavation and placement of gas, pipe bedding and the placement of a permanent gas, protective steel plate to protect an existing gas main that will remain in place.

This work shall also consist of the Subcontractor directional drilling 100 mm casing and inserting 50 mm plastic gas main.

This also does not preclude the Contractor from hiring the gas or some other Subcontractor to perform the work of construction layout, traffic control, sawcutting, pavement removal, removal of excess gas, excavation unclassified, temporary pavement, final pavement restoration, sidewalk or landscape restoration at no additional cost to the State.

Materials.

All material for gas work will be supplied by PSE&G except for the necessary gas, backfill, aggregates, minor accessories and concrete. Pipe and large fittings will be delivered directly to the job site by PSE&G. These materials shall also include the gas protective steel plate if required to protect an existing gas main. The Contractor shall be responsible for the delivery of the pipe within the jobsite unless, where possible, other delivery arrangements can be

made in which the Subcontractor must then supply unloading equipment and personnel. Other material required to complete the work on this project may have to be picked up by the Subcontractor at PSE&G's Central Stockage Facility in Sayerville. Miscellaneous materials shall be picked up at PSE&G's Store Rooms located at pertinent District Headquarters and/or other PSE&G designation for delivery to the job site. The Subcontractor shall be responsible for the adequate storage and protection of the pipe after acceptance by a representative of the Subcontractor.

All nonstandard pipe elbows will be supplied by PSE&G as standard elbows. The Subcontractor shall cut the standard elbows, 45 or 90 degrees, to match the required elbow as shown on the Construction Drawings or as field conditions may warrant.

PSE&G shall make every reasonable effort to make available materials to be furnished by PSE&G to avoid delays in the Contractor's work. However, should PSE&G for any reason, fail to make available any such item, and delay shall result, the Contractor shall not be entitled to additional compensation on account of such delay.

The Contractor shall be held responsible for removing all surplus pipeline materials from the job site. All excess pipe, fittings and other miscellaneous materials furnished by PSE&G shall be returned to the pertinent District Headquarters and/or other PSE&G designation.

Materials for gas, pipe bedding shall conform to Subsection 207.03 for class B pipe bedding.

Materials for gas, backfill shall conform to Subsection 203.03 for borrow excavation, selected material with a soil designation I - 13.

Construction Requirements.

- 1. Qualified Gas Contractors.** State's Contractor shall subcontract this gas work to one of PSE&G's qualified gas contractors. The following contractors are qualified by PSE&G to perform all work called for in this project:

Bar San Contractors, Inc. 555 Industrial Road Carlstadt, NJ 07072	Charlie Fasciano Tel: 201-842-7470 Fax: 201-842-7475
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Henkels & McCoy, Inc. Elbow Lane P.O. Box 218 Burlington, NJ 08016	Al Luciatti Tel: 609-387-9000 Fax: 609-387-9682 Harry Tucker Tel: 908-474-0500
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J. F. Creamer & Son, Inc. 1701 East Linden Ave. Linden, NJ 07036	Ted Paliwoda Tel: 908-925-3200 Fax: 908-925-3350
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DiClemente Contractors 3100 Dell Avenue No. Bergen, N.J. 07047	Andy DiClemente Tel: 201-319-0900 Fax: 201-319-9312
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Kemsco Construction, Inc. P.O. Box 10019 Newark, NJ	Ralph Fusco Tel: 973-733-2255 Fax: 973-642-2928
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Napp Grecco Company 1500 McCarter Highway Newark, NJ 07104	Tel: 973-482-3500 Fax: 973-268-3639 Gary Pilik Tel: 973-268-3639 Mario Maraschi Tel: 973-268-3617
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Waters and Bugbee 314 Dickson St. Trenton, NJ 08638	Jeff Waters Tel: 609-882-9233 Fax: 609-882-7338
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It is the responsibility of the Contractor to obtain any one or all of the qualified contractors listed when preparing their Proposal for the Project.

- 2. Compliance with PSE&G Specifications and Standards.** All gas work on this contract shall be performed in accordance with PSE&G General Specifications 94-5000 and 2000-D-100 and Gas Distribution Standards

Manual. Only the PSE&G qualified gas contractors may obtain a copy of these PSE&G documents for security reasons. Upon completion of the work, the Subcontractor shall submit to PSE&G as-built drawings as per PSE&G's criteria which includes plans and profiles in MicroStation format. As-built drawings shall be completed by the Subcontractor and accepted by PSE&G before the Engineer will issue a Certificate of Completion in accordance with Subsection 105.23 to the Contractor.

3. Scheduling of Work and Interruption to Utilities and PSE&G Operations.

- A. Contractor shall provide the Engineer and PSE&G with a detailed schedule of the work to be performed in accordance with Subsection 108.04 to include the work being performed by the Subcontractor. This schedule shall include the number of crews to be working, work locations, and time of day work shall be performed (night shift, day shift, weekends, etc.). The Subcontractor shall coordinate closely with PSE&G once construction begins. The Contractor shall notify PSE&G, through the Engineer, at least two weeks prior to construction of any gas activities. The Subcontractor shall be required to supply the labor and other resources necessary to meet the projected work schedule of the Contractor.
 - B. The work to be performed under this contract requires special attention to the scheduling and conduct of work in connection with the existing PSE&G (gas) utilities and the NJDOT's operations. No work is to be performed on gas facilities from October 1 through April 31. This period can be extended based on weather conditions and system demand requirements as determined by PSE&G.
 - C. The Subcontractor shall perform the work as specified herein in a diligent and timely fashion so as to minimize any adverse impact with PSE&G's activities and inconvenience to their operations and personnel. Hence, the Contractor shall coordinate all his operations, but most importantly gas construction activities with PSE&G, affording all reasonable cooperation and taking all prudent precautions in order to prevent excess hardship, noise or other nuisance.
 - D. Insofar as practicable, the Subcontractor's operations shall be confined to the immediate area. The Subcontractor shall not use any more space than reasonably required for gas work and shall perform the complete work returning each area to normal usage as soon as practicable.
- 4. Safety.** All excavation work shall be performed in accordance with 29 CFR Part 1926, Occupational Safety and Health Standards – Excavation. The Subcontractor is required to work in compliance with the Minimum Federal Safety Standards for Gas Lines (Part 192, TITLE 49, Code of Federal Regulations). Work shall be in compliance with all State, County or Municipal Ordinances.
- 5. Environmental.** Work shall conform to all Federal, State and Local environmental requirements, as well as to PSE&G Specifications and the Contract Special Provisions. All applicable permit requirements for physical site protection measures must be adhered to throughout construction. During the construction period, the Contractor shall assume full responsibility for site dust control measures and for any and all pollutants caused by this work which may be detrimental to the environment.
- 6. Gas, Excavation in General.** The Contractor shall provide traffic control, construction layout, sawcutting the existing pavement or sidewalk where gas lines are to be installed and remove these materials. Excavation shall conform to Section 207 in the Standard Specifications. The Contractor is also required to remove and or use on the project any excess gas, excavation unclassified excavated by the Subcontractor and not used as backfill. The Contractor shall also remove any unsuitable excavation and miscellaneous debris that is determined to be unsatisfactory for the project. However, when the Contractor has the Subcontractor performing this work the Subcontractor shall follow the plan established by the Contractor for such removal. If no plan has been established by the Contractor then the Contractor shall develop the plan, have it approved by the Engineer and require the Subcontractor to follow it. If the soil is determined to be contaminated the Contractor shall remove and dispose of the soil in accordance with Section 202 of the Specifications as approved by the Engineer. Any acceptable excess excavated materials may be used on the project as approved by the Engineer.
- 7. Verification of Contract Documents.** The Contractor and his Subcontractor shall examine the Drawings and Specifications before submitting a proposal, and shall identify the conditions under which the Subcontractor shall be obliged to operate. Any items of work not listed below shall be at no additional cost to the State. If the Subcontractor finds any errors or omissions during their evaluation of the plans for this project that are normally included as part of a gas contract they shall be brought to the attention of the State during the advertising period for this project.
- 8. Roadway Lane Closings.** Roadway lane closings shall be required when work is being performed in the roadway. The Contractor shall coordinate and schedule the lane closures with the NJDOT, as appropriate, in accordance with the Traffic Control Plans, NJDOT Standard Traffic Control Plans and Section 617 of the Specifications. Before performing any work the Subcontractor shall insure the Contractor has all the necessary traffic control devices in place.
- 9. Staging Areas.** Certain areas shall be designated as construction lay down/staging areas. The Subcontractor in coordination with the Contractor is required to provide whatever physical security is necessary to secure the material storage areas utilized for which additional payment will not be made.

10. **Temporary Fencing and Plates.** Temporary fencing and/or plates shall be required to secure excavations that are to remain open overnight. The Subcontractor shall supply and install temporary fencing and plates, as necessary. Plates shall be utilized when and where necessary or as directed by PSE&G to secure excavations required to remain open over night. The Subcontractor shall install and maintain these plates in accordance with local Municipal, State and/or County specifications at no additional cost to the State.
11. **Site Supervision.** It is the responsibility of the Subcontractor to have a competent person at the job site to determine the need for sheeting and shoring of the trench excavation. Additional payment will not be made for any sheeting or shoring required to perform the work.
12. **Quality Control.** PSE&G shall furnish an inspector on site to inspect the construction of the work by the Contractor's Subcontractor. All work shall be done in a workmanship like manner and shall be subject to the requirements, inspections, and approval of the PSE&G inspector in coordination with the State's inspector and the Engineer. PSE&G's inspector shall also track materials taken from PSE&G storerooms. PSE&G's inspector shall immediately notify the State's Engineer of any work being performed by the Subcontractor that does not meet the requirements of the Contract Agreement between the State and PSE&G including but not limited to the Drawings, Permits and Specifications. The State's Engineer will be responsible for directing the Contractor to have the Subcontractor correct defective work to meet the requirements herein. The PSE&G inspector shall immediately notify the PSE&G Engineer if the requirements of the Contract Agreement between the State and PSE&G remain unresolved or the correction of the defective work does not meet the requirements herein. If the PSE&G Engineer is not satisfied that the work meets the requirements of the Contract Agreement between the State and PSE&G, the PSE&G Engineer shall notify the Department's Project Field Manager and the Department's Utility Engineer in the Utility and Railroad Engineering Unit immediately. If the PSE&G Engineer is still not satisfied that the work meets the requirements of the Contract Agreement between the State and PSE&G, the PSE&G Engineer shall notify the Regional Construction Engineer and the Manager of the Utility and Railroad Engineering Unit immediately to resolve the problems.
13. **Damage.** All work shall be performed without damage to adjacent structures, property, and/or equipment. This includes, but is not limited to buildings, fences, roads, parking lots, bridges, culverts, drainage ditches, waterways, and wetlands. However, should damage occur, the Subcontractor shall repair and restore the damaged item to its original condition at no additional cost to the State or PSE&G.
14. **Clean-Up.** The clean-up procedure of the job site is subject to the approval of the Engineer. The Subcontractor shall, at all times, keep the site free from accumulations of waste materials and rubbish. A waste receptacle and recyclable receptacle shall be provided and maintained on the job site. There shall not be any disposal of waste in the trench excavation for any gas work.
15. **Existing Utilities and Structures.**
 - A. The Subcontractor shall be responsible for determining the location, protection and permanent support of all surface and subsurface structures encountered in the work area, including but not limited to underground electric, water, sewer or storm drains.
 - B. The Subcontractor shall notify the Engineer and the PSE&G Inspector when excavation is required within three meters of any gas, oil, water lines, telephone, electrical, or fiber optic cables. The notice shall be provided whether such lines belong to PSE&G, or are foreign; in order that PSE&G and Subcontractor may agree upon and approve an excavation method for their protection.
 - C. The Contractor shall coordinate with the Subcontractor to provide prior notice to the PSE&G Inspector, through the Engineer, when crossing foreign lines. This allows the PSE&G Inspector time to notify the owner of any possible pipeline or other facility crossing and provide that owner the option to have a representative present at the time of excavation or other construction.
 - D. In work areas that are adjacent to or under overhead power line rights of way, the Contractor and Subcontractor shall be aware of the hazards of operating their equipment and take precautions to insure the safety of personnel and the integrity of the existing power line facilities.
 - E. All work shall be performed in accordance with NJSA 34:6-47 "High Voltage Proximity Act".
 - F. All street signs, mailboxes and similar items shall be appropriately removed and reinstalled by the Subcontractor in accordance with Section 201 as required.
16. **Restoration and Landscaping in General.** The Contractor shall be responsible for all temporary and final restoration or landscaping within the right-of-way. The Subcontractor shall be responsible for all temporary and final restoration or landscaping outside the right-of-way. However, the placement of steel plates over gas excavations to remain open overnight shall also be the responsibility of the Subcontractor. When the work is inside the right-of-way the Subcontractor shall backfill up the bottom of a temporary pavement box, permanent pavement box, sidewalk box or the bottom of topsoil. The Contractor shall be required to place all materials in the temporary pavement box, its removal, the final pavement box, sidewalk box or topsoil and fertilizing and seeding. When the restoration area is outside the right-of-way the Subcontractor shall be responsible for construction layout, excavation and all other operations necessary up to a complete restoration

of the areas impacted by their work to the satisfaction of the Resident Engineer. Landscaping shall conform to the requirements under Division 800 of the Specifications. The Subcontractor shall also provide fencing and/or steel plates for any gas excavations left open overnight. Final restoration by the Contractor, inside the right-of-way, shall conform to the Construction Drawings and Specifications for the project. The Subcontractor shall restore all areas impacted by their work, outside the right-of-way, to its original condition and satisfaction of the Resident Engineer. Separate payment will not be made to the Subcontractor for this excavation, restoration or landscaping work which may also include replacement of sidewalks and driveways.

17. **Tie-in and Gas Out.** Subcontractor shall make and have available all equipment and personnel needed to make simultaneous cutout and tie-in of both ends of the new pipe. PSE&G shall be responsible for purging and cutting the pipeline. Once started, the work shall continue until completed. Tie-in excavations shall be left open and/or plated as required, or until PSE&G has completed all its work.
18. **Sheeting and Dewatering.** The Subcontractor shall be responsible for the design and installation of all solid tight sheeting. The Subcontractor shall provide all dewatering required to affect the work to be performed as part of this contract, in conformance with Subsection 212.06, Subparagraph J.
19. **Pressure (Air) Test.** The Subcontractor shall perform an air pressure test on all new piping in the field including the tie-in pieces. The proper time, method, and sequence of operation for the testing of the line shall be in coordination with the Engineer at PSE&G's direction and under direct PSE&G supervision. The minimum test duration times are noted in the table below. The cost of this test, including but not limited to appropriate excavations, and the passing of a scraper barrel pig (steel mains) or poly pig (plastic mains), shall be included in the overall cost of the proposed items, noted below, for this work scheduled in the Proposal.

Pressure (Air) Test

Size	Material	Test Pressure (kPa)	Duration (Hours)
100 mm (4")	Plastic	62.1 (90 psi)	0.25 (15 min)
150 mm (6")	Plastic	62.1 (90 psi)	0.25 (15 min)
200 mm (8")	Plastic	62.1 (90 psi)	0.25 (15 min)

- A. The Subcontractor shall supply all required small fittings, valves, hoses, pipe, etc. to connect the test equipment. The Subcontractor shall also supply two (2) compressors to attain the required test pressures, canvas or burlap to cover the exposed piping, qualified personnel and equipment required to install, operate, and remove equipment and temporary piping at no additional cost to the State.
 - B. A PSE&G representative shall supervise the test after the piping is pressurized. The section under test should be allowed to reach equilibrium before the test is started. If pressure loss is observed, the Contractor shall be responsible for locating and repairing any and all leaks at no additional cost to the State.
 - C. All steel mains shall be pigged using a scraper barrel (pig) driven by compressed air to remove internal pipe debris prior to placing the main in service. The Subcontractor shall also be required to furnish the pig in a new or near-new condition and all other necessary equipment for its operation. All these costs shall be included in the cost of the pipe installation.
 - D. If deficiencies are found, they shall be corrected and re-tested as soon as possible. All work and material required to rectify the deficiencies shall be performed at no additional cost to the State.
20. **Installation of Gas Mains.** This work shall consist of all work required for the installation of gas mains. This work includes laying the pipe, welding or fusing the pipe, installing elbows and associated fittings and appurtenances, cathodic protection, testing, and backfilling with gas, excavation unclassified. When sufficient excavated material are not available the Subcontractor shall provide and install gas, backfill. The Contractor shall construct a temporary riding pavement final pavement or a landscaped surface as required. This work may also include any sheeting and dewatering associated with laying the pipe to be provided by the Subcontractor. PSE&G shall install the tie-in pieces as called for in the plans.
- A. Installation of the pipe shall conform to Section 602 where applicable, the contract documents and with the following construction sequencing:

Phase I

Construction

Install 302 LM of 100 mm plastic gas main (Station 94+010 to Station 94+310) on Route 46 Westbound side.

Directional drill 75 LM of 100 mm HDPE sleeve from Station 94+312 on Route 46 Westbound side to rear driveway of Pizza 46.

Install 89 LM of 50 mm plastic service from Station 94+310 on Route 46 Westbound side to Pizza 46 point of entry.

Install Linestop (Station 94+010) on Route 46.

Gas Transfer

Close Linestop

Transfer service for Park West Diner at Station 94+180.

Complete Tie-in at Station 94+010

Open Linestop

Phase II

Construction

Contractor shall verify that services to buildings being demolished have been disconnected. (See Section 22 Item G)

Install 279 LM of 100 mm plastic gas main (Station 94+580 to Station 94+839) on Route 46 Eastbound side.

Install Spherical Tee on existing 75 mm steel gas main (Station 94+839).

Gas Transfer

Perform Linestop (Station 94+839).

Transfer services (Station 94+591, Station 94+602, and at Station 94+796).

Close Tee

Phase III

Construction

Prior to any construction activity, Contractor to verify with PSE&G that Regulator located on Browertown Road at the intersection East Main Street has been installed and is functioning. The contact person at PSE&G shall be Jorge Silva, (973) 430-7333.

Install 235 LM of 200 mm plastic gas main (Station 10+171 to Station 10+400) on Browertown Rd.

Install 6 LM of 150 mm plastic gas main at Driveway A.

Install temporary bypass at Driveway A

Install 180 LM of 100 mm plastic gas main (Station 10+173 on Browertown Rd to Station 0+156 on Briarwood Court).

Gas Transfer

Install Linestop (Station 10+400) on Browertown Rd.

Bag existing 150 mm plastic gas main at Driveway A and perform tie-in.

Transfer services on Browertown Road.

Transfer services on Briarwood Court.

Complete Tie-in (Station 10+400) on Browertown Road.

Phase IV

Construction

Install 17 LM of 200 mm plastic gas main (Station 9+792 to Station 9+809).

Install 6 LM of 150 mm plastic gas main (Station 9+805 to entrance of Driveway to Shop Rite)

Install temporary bypass at entrance of Driveway to Shop Rite.

Gas Transfer

Bag existing 150 mm cast iron gas main at entrance of Shop Rite Driveway and perform tie-in.

Bag existing 150 mm cast iron gas main (Station 9+972) on Browertown Road and perform tie-in

- B. All pipe shall be installed at the nominal cover of 0.91 meters (36"), except when crossing drains, culverts, etc. as shown on the Contract Drawings or as field conditions permit. Except for the placement of sand 152mm (6") below and 305mm (12") above the main, the trench shall be backfilled with excavated material. The use of quarry process stone or additional sand may be approved at the direction of the PSE&G Inspector. Backfill shall be well compacted under and around the sides of the pipe, and thereafter in 152mm (6") lifts. Excess soil must be removed and disposed of at the Contractor's expense.

- C. It shall be the responsibility of the Subcontractor to ensure the gas mains are installed within the established boundaries as shown on the Construction Plans. However, the Contractor is responsible for construction layout.
 - D. Insulating joints, valves, valve risers, miscellaneous fittings, locating wire, pipeline markers, test stations, and/or any other necessary appurtenances shall be installed as directed by PSE&G in coordination with the Engineer and shall be incorporated into the price bid for the various items for gas pipe installation noted below. There shall be no additional compensation for this work.
 - E. Directional drill method for installing pipe at a wetland crossing consists of all work required for the installation of plastic service gas pipe within a High Density Polyethylene (HDPE) sleeve by horizontal directional drilling methods. The sleeve shall be installed by directionally drilling a hole from one side of the crossing to the other side, without disturbing the wetland or altering the hydrology of the wetland. This work includes excavating both a boring and receiving pit, directionally drilling a 100 mm HDPE pipe, and inserting a 50 mm plastic service gas pipe. The directional drilling shall be guided by guidance equipment that gives continuous accurate monitoring of the drill bit positions. The rigs and all necessary auxiliaries, appurtenances, tools, support vessels and equipment shall be supplied by the Subcontractor. Staging areas shall be restricted to paved areas. The Subcontractor shall comply with all applicable Federal, State and Local laws and regulations relating to material handling and disposal. Drilling fluids must be disposed of in accordance with the New Jersey Department of Environmental Protection regulations. The work shall conform to all applicable Federal, State, and local laws and regulations of the Occupational Safety and Health Administration (OSHA).
- 21. Gas, Rock Excavation.** The gas, rock excavations pay item shall conform to Section 202 and the following:
- A. This work shall consist of all work required for the installation of gas mains or excavations required for other gas activities.
 - B. Excavation of rock shall conform to Section 202.06 and Section 202.07, where applicable, where blasting and drilling are concerned.
 - C. Rock excavation shall be defined by excavations of boulders more than 0.8 cubic meters in volume and rock in ledge formations which cannot be excavated except by drilling or drilling and blasting.
 - D. Rock shall not be excavated without the written approval of NJDOT and /or PSE&G Engineer.
- 22. Installation of Gas Service.** The work associated with installing a gas service shall consist of all work required for the transfer/installation of a gas service, permanent or temporary. This work includes breaking out the existing pavement and its removal by the Contractor. The Subcontractor shall excavate the trench, lay the bedding, lay the pipe, fusing the pipe, assisting PSE&G tie into the main and backfilling, including final restoration and landscaping outside the right-of-way. The Contractor shall provide a temporary riding pavement, final pavement, sidewalk or a landscaped surface as required inside the right-of-way. The Subcontractor shall also be required to perform all associated work with the transfer service. This work includes the excavation of one (1) tie-in hole for direct burial and transfer installations and two (2) tie-in holes for insert installations. Any additional excavation pits required for service installation work will be paid for on a cubic meter basis under the pay item gas, excavation unclassified.
- A. Only the Subcontractor's personnel trained by PSE&G and carrying an up-to-date qualification card shall make fused or mechanical connections on plastic service pipe.
 - B. All service installations shall be 12.7mm through 31.8mm plastic tubing and 51mm, 76mm, 102mm, and 152mm plastic pipe. The services shall be installed by either inserting plastic in the existing service or by directly burying plastic tubing/pipe. PSE&G shall witness and record the pressure testing of the services. Pressure test the service as required and soap test all fuses and mechanical connections.
 - C. The Subcontractor shall be responsible to perform all work associated with the service installation by using direct burial plastic pipe. This shall include, but is not limited to, the following steps:
 - 1. Use pressure control equipment to shut the gas off at the service tee on the existing main prior to cutting the existing service pipe.
 - 2. Disconnect the service pipe inside the building before the meter. Support the meter set to avoid stress on the house piping.
 - 3. Excavate and install the replacement/new direct burial plastic service, including location wire, from the main to the building. This shall include a curb shut off behind the curb and a meter shut off at the head of the meter. Seal the hole in the foundation wall surrounding the service pipe with cement and/or water plug grout.
 - 4. Electrofuse/weld the self-tapping tee to the new main and connect it to the new plastic service using Electrofuse/mechanical fittings.
 - 5. Pressure test the service as required soap test all fuses and mechanical connections. When the air test is satisfactory, release pressure, tap self-tapping tee and gas out service through the hose from

- the meter shut off to the outside of the building until a 95% to 100% gas reading is obtained on a combustible gas indicator. Install tee cap and soap test.
- D. The Subcontractor shall be responsible to perform all work associated with service installation by plastic insertion. Trenching or direct burial from the existing gas main to the point of insertion shall be paid for under the work performed for gas service insertion. This work shall include, but is not limited to, the following steps:
 1. Use pressure control equipment to shut the gas off at the service tee on the existing main prior to cutting the existing service pipe.
 2. Excavate and remove any curb shut off, offset, swing or service drip that may impede the insertion of the plastic pipe.
 3. Disconnect the service pipe inside the building before the meter. Support the meter set to avoid stress on the house piping.
 4. Ream the existing service, from the building to the main, with the appropriate sized reamer. Once the service is reamed, air blow the service from the house to the main.
 5. Insert the plastic tubing from main to the house or building receiving the service. This shall include the installation of a curb shut off and a meter shut off valve at the head of the service. The meter shut off valve shall be left in the open position with the plug installed.
 6. Electrofuse/weld the self-tapping tee to the new main and connect it to the new plastic service using Electrofuse/mechanical fittings.
 7. Pressure test the service as required and soap test all fuses and mechanical connections. When the air test is satisfactory, release pressure, tap self-tapping tee and gas out service through the hose from the meter shut off to the outside of the building until a 95% to 100% gas reading is obtained on a combustible gas indicator. Install tee cap and soap test.
 - E. The Subcontractor shall also be responsible to perform all work associated with the service transfer. This shall include, but is not limited to, the following steps:
 1. Use pressure control equipment to shut the gas off at the service tee on the existing main prior to cutting existing service pipe.
 2. Disconnect the service pipe inside the building before the meter. Support the meter set to avoid stress on the house piping. Install plug in meter shut off valve and leave valve open.
 3. Electrofuse/weld the self-tapping tee to the new main and connect it to the existing service using Electrofuse/mechanical fittings.
 4. Pressure test the service as required and soap test all fuses and mechanical connections. When the air test is satisfactory, release pressure, tap self-tapping tee and gas out service through the hose from the meter shut off to the outside of the building until a 95% to 100% gas reading is obtained on a combustible gas indicator. Install tee cap and soap test.
 - F. Park West Diner and Pizza 46 Service. Service to the Park West Diner located on Route 46 West and Pizza 46 shall be done at a time so as to minimize disruption to Diner and Pizza 46 customers. Subcontractor to coordinate time of construction with Park West Diner and Pizza 46 owner. Downtime and tie-over time to be decided by PSE&G Inspector and PSE&G Service Department. Subcontractor to coordinate downtime and tie-over time with PSE&G inspector and Park West Diner and Pizza 46 owner. This works includes the installation of a local regulator at both locations as part of the service replacement.
 - G. Cut off of gas services to all buildings being demolished will not be shown on construction plans. Contractor is responsible to notify Bill Mongeau of PSE&G at (908) 709-2240 of all services to be cut off. A three (3) month notification to PSE&G is required before any demolition activity.

23. Plastic Gas Pipe.

- A. The Subcontractor shall have two qualified fusers (laborer, foreman, etc.) on the job site when installing plastic mains and/or plastic services. All fuses must be inspected by another qualified fuser who is not performing the fusing operation.
- B. The plastic pipe supplied by PSE&G will be heat fusible, medium density, polyethylene PE-2406 Driscopipe or Plexcopipe. The Subcontractor's personnel fusing and inspecting butt fusion joints must be certified by PSE&G in accordance with the "Minimum Federal Safety Standards for Gas Lines", Part 192, TITLE 49, and must carry a fusion qualification card with them at all times. It shall be the Subcontractor's responsibility to supply the heat fusion equipment that has been inspected and certified by PSE&G before use.
- C. Lengths of Polyethylene pipe shall be adequately supported every 3.05 meters. during storage and while being transported to and from the jobsite.

- D. The Subcontractor shall prefab Steel by Plastic Transition Fittings with an electric arc welder. Care must be taken to prevent excessive heat from being transmitted to the plastic portion of the fitting.

24. Gas, Excavation Unclassified.

- A. Prior to the Subcontractor beginning their excavation the Contractor shall have completed the pavement sawcutting and pavement or sidewalk removal. The Subcontractor shall then perform their gas pipe excavation, excavation for pits required for line stop, flow stop, bagging and venting, hot taps, purging and the tie-in. The Subcontractor shall excavate for the gas main or the pits and backfill to the bottom of the pavement box, sidewalk box or bottom of topsoil for work inside the right-of-way. The Contractor shall provide a temporary riding pavement, final pavement, sidewalk or a landscaped surface when gas main is complete and or the pit is no longer required. The Subcontractor shall also provide sheeting and dewatering of the gas main trench or pits as required. PSE&G will perform line stop, flow stop, bagging and venting, hot taps, purging of the gas, and tie-in. The Subcontractor shall perform the thrust restraint and bell joint encapsulation work as required.
- B. The excavation pits may be left open and/or plated as required, or until PSE&G has completed its work. A temporary skid resistant structural steel plate shall be used as required. This structural plate shall conform to the requirements of Subsection 917.10 of the Standard Specifications.
- C. Line stop, bag and vent, and tie-in pits shall be made accessible for a period of several weeks for PSE&G or as directed based on field conditions.

25. Gas, Hot Tap, Line Stop Preparation. Hot Tap Preparation shall consist of the Subcontractor supplying labor and equipment to prepare the existing main for a hot tap that will be performed by PSE&G. This includes but is not limited to welding the spherical tee, three way tee, line stop fitting or other fitting on the existing steel main, installing the split sleeve collar, line stop fitting, or other fitting on the existing cast iron main. The Subcontractor shall have the Contractor notify the Engineer two weeks prior to welding the fitting so that PSE&G can supply an inspector and a qualified welder to oversee the welds. If PSE&G staff are not on site the work will not be approved.

26. Tie-in Assistance. Line Stop assistance shall consist of the Subcontractor supplying labor and equipment necessary to perform the work and handle the pipe, in coordination with the Engineer, as specified by the PSE&G line stop specialists in performing the line stop and also by PSE&G for the tie-in.

- A. Manpower required for 50mm (2") thru 200mm (4") pipe one (1) Foreman two (1) Labors one (1) Machine Operator.
- B. Equipment rubber tire backhoe

Method of Measurement.

Gas, excavation unclassified will be measured by the cubic meter in accordance with Subsection 202.14. Gas, excavation unclassified will not include excavation for the installation of gas pipes.

Gas main pipe of various sizes, installed depths, and type of material will be measured by the linear meter.

Gas service insertion of the various sizes will be measured by the number of each.

Gas service direct burial of the various sizes that are thirty meters or under will be measured by the number of each.

Gas service transfer of the various sizes will be measured by the number of each.

Tie-in assistance of the various sizes will be measured by the crew-hour. (Time will be measured by the NJDOT inspector.)

Gas, hot tap, linestop preparation will be measured by the number of each.

Gas, pipe bedding will be measured by the cubic meter.

Gas, backfill will be measured by the cubic meter.

Gas, directional drilling will be measured by the number of units.

Gas, rock excavation will be measured by the cubic meter.

Basis of Payment.

Payment will be made under:

Pay Item

100 MM PLASTIC GAS MAIN
150 MM PLASTIC GAS MAIN
200 MM PLASTIC GAS MAIN
GAS SERVICE INSERTION
GAS SERVICE INSTALLATION

Pay Unit

LINEAR METER
LINEAR METER
LINEAR METER
UNIT

(LESS THAN 30 METERS)	UNIT
GAS SERVICE TRANSFER	UNIT
TIE-IN ASSISTANCE	CREW-HOUR
GAS, HOT TAP, LINESTOP PREPARATION	UNIT
GAS EXCAVATION, UNCLASSIFIED	CUBIC METER
GAS, PIPE BEDDING	CUBIC METER
GAS, BACKFILL	CUBIC METER
DIRECTIONAL DRILL	
GAS, ROCK EXCAVATION	CUBIC METER

Separate payment will be made to the Contractor for final pavement, sidewalk or landscape restoration under the items for that work contained in the Proposal.

Separate payment will not be made to the Contractor for construction layout, traffic control, sawcutting, pavement removal and disposal, the removal of excess gas, excavation for construction of pipe, or temporary pavement and its removal and all such costs such costs shall be included in the various gas bid items contained in the Proposal.

Separate payment will not be made to the Subcontractor for backfilling with the materials removed by gas, excavation unclassified. Payment will be made to the Subcontractor for gas, backfill as provided in the Proposal. All work shall be done in conformance with Section 207.

Separate payment will not be made to the Subcontractor for supplying the necessary small fittings, valves, hoses, pipe, etc. to connect the test equipment for Pressure (Air) Test and to perform the test itself.

Separate payment will not be made to the Subcontractor for temporary sheeting and dewatering excavation trenches or tie-in pits and all costs shall be included in the various gas items contained in the Proposal.

Separate payment will not be made to the Subcontractor for temporary fencing or temporary steel plates to keep trenches open overnight and all costs shall be included in various gas items contained in the Proposal.

Separate payment will not be made to the Subcontractor for restoring areas outside the right-of-way line that are impacted by their operations.

SANITARY SEWER (TOWNSHIP OF LITTLE FALLS)

Description.

This work shall consist of constructing sanitary sewers at the locations shown on the plans.

Materials.

1. Ductile Iron Sewer Pipe (D.I.P)

A. Description

All Ductile Iron Pipe shall conform to ASTM Specification A-746. Ductile Iron Pipe shall be centrifugally cast in metal molds in accordance with ANSI/AWWA C151/A21.51. The pressure class shall be Pressure Class 2.4 MPa (350 psi) unless indicated otherwise on the Contract Drawings or specified elsewhere. All pipe and fittings shall have a cement mortar lining conforming to requirements of ANSI A 21.4. Pipe shall be furnished in 4.9 meter (nominal 16-foot) to 6.1 meter (nominal 20-foot) laying lengths with sufficient random lengths in multiples of 0.6 meters to properly locate tees and wyes. The exterior of the pipe and fittings shall be externally coated with a uniform thickness of approximately 1mm of hot-applied coal tar coating. The finished coating shall be neither brittle when cold, nor sticky when exposed to the sun, and be strongly adherent to the pipe. The weight, class and pipe material shall be conspicuously indicated by the manufacturer on the outside of the pipe.

B. Joints

Joints shall be rubber gasket push-on-type. These joints shall conform to ANSI/AWWA C111/A21.11 and be approved by the Engineer.

All cutting of ductile iron pipe shall be done with a pipe cutter or saw (not by chisel or other unapproved methods) and all cut edges smoothed with a file.

Construction Requirements.

Before testing the pipeline must be backfilled and braced sufficiently to prevent movement under pressure.

1. Contractor To Assist Inspectors.

The Contractor shall furnish materials, tools and men to assist the Inspectors and to handle survey equipment, levels, grade poles, plumb bobs, straight edges, laser equipment, and other equipment used for transferring grades, setting strings on profiles or grade slates or aligning pipe. While Inspectors may at times assist or

check alignment, the Contractor's crew shall not be dependent upon the Inspectors for the performance of such work. All labor, tools and facilities needed to set or transfer line and grade, to measure pipe beds, pipe grade and line, etc. shall be furnished by the Contractor.

2. Trench Excavation And Backfill.

Trench Excavation and Backfill shall conform to Section 207. The current safety regulations of all applicable safety codes, including the Occupational Safety and Health Administration (OSHA) shall be strictly followed-up and adhered thereto.

3. Sanitary Sewer Construction In Proximity To Water Main.

The Engineer may vary the location of sanitary sewers in close proximity to water mains. No variations in location shall be permitted without approval of the Engineer.

Horizontal separation – Sewers should be laid at least 3.0 meters horizontally from any existing or proposed water main. Should local conditions prevent a lateral separation of 3.0 meters, a sewer may be laid closer than 3.0 meters to a water main if (1) it is laid in a separate trench, or if (2) it is laid in the same trench with the water mains located at one side on a bench of undisturbed earth and if in either case the elevation of the crown of the sewer is at least 457 mm below the invert of the water main.

Vertical separation – Whenever sewers must cross under water mains, the sewer shall be laid at such an elevation that the top of the sewer is at least 457 mm below the bottom of the water main. When the elevation of the sewer cannot be varied to meet the above requirements, the water main shall be relocated to provide this separation or reconstruct it with mechanical joint pipe for a distance of 3.0 meters on each side of the sewer. One full length of water should be centered over the sewer so that both joints shall be as far from the sewer as possible.

When it is not possible to obtain proper horizontal and vertical separation as stipulated above, both the water main and sewer shall be constructed of mechanical joint cast iron pipe or ductile iron pipe and shall be pressure tested to assure water tightness; or, the sewer shall be concrete encased for a distance of 3.0 meters on either side of the water main in accordance with the details shown on the Contract Drawings or as ordered by the Engineer.

The Engineer may take or order such measurements to be taken at any time during the maintenance period. These measurements shall be taken in a manner and by such methods as approved by the Engineer.

4. Inspection And Testing.

A. General.

Upon completion of the installation and backfilling portions of the sanitary sewer, the pipe shall be inspected by one or several of the methods subsequently described. This inspection and testing shall be undertaken as the work progresses. The Engineer shall be notified 24 hours in advance of such inspection and testing and the Contractor shall provide all facilities, materials, equipment and labor required for such testing. Such inspection and testing shall be prerequisite for acceptance of all work.

B. Visual Inspection.

An inspection of the interior of the completed Sanitary Sewer Pipe by direct visual inspection shall be made for all pipe installed from manhole to manhole. Any lights, equipment or labor necessary for such inspection shall be provided by the Contractor.

Any foreign material found in the interior of the sewer, any dirt, debris or other objects shall be removed by the Contractor. Visible defects such as broken pipe sections, improperly installed gaskets, projecting connections, cracks, visible leaks or other defects shall be noted, corrected and the pipe reinspected.

C. Allowable Infiltration And Exfiltration Rates.

Infiltration and/or exfiltration rates shall not exceed the following rates for the types of pipes as listed:

Type of Pipe	Infiltration/Exfiltration Rate (gal./mile/inch diam./24 hrs.)
D.I.P.	50

These requirements shall be net for every section (between manholes) of pipe; it is not a cumulative average over several sections of pipe.

Infiltration/Exfiltration rates shall be determined on the main sewer and shall be within the allowable rates for the pipe as specified above to the installation of any laterals. All Wyes, Tees and other fittings in the main sewer line shall be adequately capped or plugged to withstand the maximum anticipated head during exfiltration testing and to prevent debris, groundwater, etc. from entering during infiltration testing. Any caps or plugs which "Blow-out" or leak shall be replaced as often as necessary by the Contractor at no additional cost to the State until the main sewer passes the infiltration/exfiltration test.

The first section or pipe (between two manholes) laid by each pipe crew shall immediately be tested upon completion in order to check workmanship. The engineer may call for infiltration or exfiltration tests any time on any section of pipe.

D. Air Pressure Testing Shall follow the same requirements as Gas Mains.

E. Exfiltration Testing

Where so required by the Engineer, after laying and jointing, Sanitary Sewer Pipe shall be tested for leakage by internal water pressure. For this purpose, the Contractor shall furnish and install suitable temporary plugs or stoppers at appropriate intervals along the line, together with suitable riser pipes where manholes cannot be used, through which the pipe line under test may be filled and the required water head applied to the section under test. In general, such tests shall be made on sections extending from manhole to manhole, but sections or other lengths shall be tested if conditions make that advisable. When the test is to be made, the Engineer shall be notified in advance, the pipe and manhole (or riser) filled with water to a level 1.5 meters above the highest point of the crown of the sewer tested or the groundwater level, whichever is greater, and allowed to stand subject to that head for not less than 4 hours, unless otherwise specified, during which time the rate of exfiltration shall be recorded by measuring the volume of water used in restoring the water level in the manhole (or riser) to its original level. This general level shall be maintained at all times during the test.

F. Infiltration Testing

If so directed by the Engineer, the sewer shall be tested for infiltration of groundwater at such time or times as the groundwater level is high and after the trench has been backfilled and compacted. The groundwater leakage into the pipe will be measured by the Engineer at such point or points as he may direct, preferably as he may direct, preferably as near the lower end of the section of sewer under test as practicable. The Contractor shall provide or construct suitably calibrated weirs, provide and set temporary stoppers with small pipes from which the flow of water may be measured, or other means of measurement as shall be required, and shall do such pumping as shall be necessary to enable the test to be properly made, and furnish labor to assist the Engineer, all without additional expense to the Owner. Infiltration testing shall be permitted only where the existing groundwater level can be shown to be at least 0.6 meters above the highest point of the crown of the sewer being tested. Otherwise, exfiltration testing, as previously described, shall be required. The existing groundwater level shall be determined by direct measurement via an observation well pipe placed in the trench prior to backfilling. The lower end of the observation pipe shall be embedded in the foundation stone used for sewer bedding at approximately the sewer invert elevation, or lower, and the upper end at or above finished grade. Pipe so installed for dewatering purposes may be used for this purpose. Observation pipes shall be installed by the Contractor at no additional cost to the Owner in locations adjacent to manholes where ordered by the Engineer. They shall be removed upon acceptance of infiltration/exfiltration tests.

5. Test By Sections

After any such section has been tested, the Engineer may, at his discretion, permit capped connections to be made with this section of sewers by other parties; said sections may not be put in service until all sewers contemplated under this Contract have been completed and tested unless specifically waived by the Owner.

A. General

The phrase "per mile of Pipes" shall refer to the total length of main sewer, measured through manholes, plus the lengths of all connections, laterals and branches.

The maximum allowable infiltration/exfiltration rate shall be as specified previously in these Specifications. Any sewers not in compliance with these requirements shall be corrected by the Contractor until such time as these rates can be met or approved by the Engineer. Such corrections as necessary shall be made by the Contractor at no additional cost to the Owner.

Temporary stoppers and testing facilities shall be removed after this work has been completed and sewer restored in good order.

Should the section of pipeline fail to pass the infiltration/exfiltration test, the Engineer will require the Contractor to inspect the line (including closed circuit TV) to isolate the source of leakage and correct the same. No separate payment shall be made for such inspection or corrective measures, the cost thereof being included in the unit cost bid for the various classes and sizes of sanitary sewers.

After such corrective work has been completed, measurements of the flow shall again be made. If the flow still exceeds the allowable rates, further corrective measures shall be taken and continued by the Contractor to reduce the infiltration until it shall, by measurement, be less than the allowable rate.

6. Bypass Pumping

The Contractor shall furnish all labor, material and equipment required to control flow during the various portions of the work under this contract, including clearing, internal inspection, pipe removal and replacement, manhole construction and all other work necessary and incidental to complete the contract.

The work shall include, but not be limited to, flow bypassing (utilizing existing sanitary sewers, flow pumping and/or other control techniques to allow for the completion of the work as directed by the Engineer.

The Contractor shall investigate the location, elevations and flow within each sewer reach involved and develop a plan for flow control and bypassing that will permit the work under this contract to proceed uninterrupted. The plan shall be submitted to the Engineer for review and approval prior to the beginning of work and shall be complete in accordance with these specifications. Modifications in the plan, which shall be used for flow control, may be made as conditions warrant and as approved by the Engineer. Approval of the Engineer of the flow control plan shall not relieve the Contractor from his responsibility in installing and maintaining an adequate system of flow control.

The plan of flow control and bypass shall consider bypass pumping and/or flow regulation utilizing control plus and the existing sanitary sewer system. No discharge of sanitary sewer and industrial waste waters into storm drainage system shall be permitted.

A flow control plan utilizing bypass pumping shall generally include the following:

Bypass pumping equipment shall match the maximum anticipated sewage flow conditions at the location of the bypass plus an additional 100% (i.e. maximum sewage flow X 2.0). The Contractor is specifically cautioned that existing sanitary sewer collecting system has a very high degree of infiltration, particularly during rain storms, and not that this factor should be taken into consideration to properly size the pumping needs contemplated.

Discharge piping, conduits or hoses utilized shall suit the site conditions and shall be water tight conveyance of the bypassed sewage. The equipment and piping shall be maintained in an acceptance manner during the entire bypass pumping operation.

Should the bypass pumping operation fail or should a surcharge condition prevail upstream of the pumping (indicating that the pump was not matching the flow), the Contractor shall immediately relieve the backup. No appreciable backup of sewage will be allowed. The Contractor shall be responsible for any liability relative to backup of sanitary flow which may occur during his bypass pumping or flow restriction operations. There shall be no transfer of liability to the State, Municipality or the Engineer.

Sewer plugs required for flow regulations shall be air expandable with solid metal or dense rubber end pieces of the proper size required for each location of use shall be approved by the Engineer. Sewer plugs when installed shall be adequately secured above ground and installed in such a manner so as to allow their removal without entry into the manhole. Sewer plugs shall not be installed at the downstream inverts of manholes unless specifically directed otherwise by the Engineer.

Each bypass station shall have standby pump or pumps of sufficient capacity to immediately replace any stopped or damaged pump thus providing uninterrupted conveyance of sewage until gravity flow of sewage is restored. If pumping is required on a 24 hour basis, all engines shall be equipped in a manner to keep the pump noise at a minimum.

It shall be the responsibility of the Contractor to provide for uninterrupted traffic flow during by-pass pumping operations.

Method of Measurement.

Ductile Iron Sanitary Sewer Pipe will be measured by the linear meter.

Basis of Payment.

Payment will be made under:

Pay Item

___ MM DUCTILE IRON SANITARY SEWER PIPE

Pay Unit

LINEAR METER

Separate payment will not be made for infiltration or exfiltration testing, pipe plugs or bypass pumping, but all costs thereof shall be included in the bid prices for Ductile Iron Sanitary Sewer Pipe.

DIVISION 800 – LANDSCAPING

SECTION 808 - FERTILIZING AND SEEDING

808.05 Basis of Payment.

THE SECOND PARAGRAPH IS CHANGED TO:

Payment will not be made for areas of fertilizing and seeding disturbed by Construction Operations, beyond the prescribed grading limits in islands and medians, and between prescribed grading limits and the right-of-way line, except as follows:

all areas within the right-of-way limits approved for storage of topsoil.

DIVISION 900 - MATERIALS

SECTION 902 - BEAM GUIDE RAIL

902.02 Posts, Timber and Routed Timber Spacers, and Recycled / Synthetic Spacers.

The approved manufacturers are Lifetime Lumber and Mondo Polymer Technologies, Polylumber.

SECTION 903 – HOT MIX ASPHALT

903.01 Composition of Mixtures.

For this Project, the 25 percent or less RAP requirements shall govern.

SECTION 904 - BITUMINOUS MATERIALS

904.01 Asphalt Binder.

THE FIRST SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

Asphalt binder shall conform to AASHTO M320, "Performance-Graded Asphalt Binder".

904.06 Temperature-Volume Correction Factors.

SUBSECTION IS CHANGED TO:

Temperature-volume correction factors that shall be used to convert the volume of bituminous materials, measured at the temperature at the point of use, to the volume at 15°C are found in the following tables:

**Table 904-1 Temperature-Volume Correction Factors
for Bituminous Materials**

Asphalt Binder, All Grades.
Cut-Back Asphalt, Grades RC-800, RC-3000, MC-800, and MC-3000.
Inverted Emulsified Asphalt, Grade IEMC-800.

Temp (°C)	Factor	Temp (°C)	Factor	Temp (°C)	Factor	Temp (°C)	Factor
5	1.006 3	30	0.990 6	55	0.975 1	80	0.959 7
6	1.005 7	31	0.990 0	56	0.974 5	81	0.959 1
7	1.005 0	32	0.989 3	57	0.973 8	82	0.958 5
8	1.004 4	33	0.988 7	58	0.973 2	83	0.957 9
9	1.003 8	34	0.988 1	59	0.972 6	84	0.957 3
10	1.003 1	35	0.987 5	60	0.972 0	85	0.956 7
11	1.002 5	36	0.986 9	61	0.971 4	86	0.956 1
12	1.001 9	37	0.986 2	62	0.970 8	87	0.955 5
13	1.001 3	38	0.985 6	63	0.970 1	88	0.954 9
14	1.000 6	39	0.985 0	64	0.969 5	89	0.954 2
15	1.000 0	40	0.984 4	65	0.968 9	90	0.953 6
16	0.999 4	41	0.983 7	66	0.968 3	91	0.953 0
17	0.998 7	42	0.983 1	67	0.967 7	92	0.952 4
18	0.998 1	43	0.982 5	68	0.967 1	93	0.951 8
19	0.997 5	44	0.981 9	69	0.966 5	94	0.951 2
20	0.996 9	45	0.981 3	70	0.965 8	95	0.950 6
21	0.996 2	46	0.980 6	71	0.965 2	96	0.950 0
22	0.995 6	47	0.980 0	72	0.964 6	97	0.949 4
23	0.995 0	48	0.979 4	73	0.964 0	98	0.948 8
24	0.994 4	49	0.978 8	74	0.963 4	99	0.948 2
25	0.993 7	50	0.978 2	75	0.962 8	100	0.947 6
26	0.993 1	51	0.977 5	76	0.962 2	101	0.947 0
27	0.992 5	52	0.976 9	77	0.961 6	102	0.946 4
28	0.991 8	53	0.976 3	78	0.960 9	103	0.945 8
29	0.991 2	54	0.975 7	79	0.960 3	104	0.945 2

Table 904-1 (Continued)

Temp (°C)	Factor	Temp (°C)	Factor	Temp (°C)	Factor	Temp (°C)	Factor
105	0.944 6	130	0.929 6	155	0.914 5	180	0.900 2
106	0.944 0	131	0.929 0	156	0.914 2	181	0.899 6
107	0.943 4	132	0.928 4	157	0.913 6	182	0.899 0
108	0.942 8	133	0.927 8	158	0.913 0	183	0.898 4
109	0.942 2	134	0.927 2	159	0.912 4	184	0.897 9
110	0.941 6	135	0.926 6	160	0.911 9	185	0.897 3
111	0.941 0	136	0.926 0	161	0.911 3	186	0.896 7
112	0.940 4	137	0.925 4	162	0.910 7	187	0.896 1
113	0.939 8	138	0.924 8	163	0.910 1	188	0.895 5
114	0.939 2	139	0.924 2	164	0.909 5	189	0.895 0
115	0.938 6	140	0.923 6	165	0.908 9	190	0.894 4
116	0.938 0	141	0.923 1	166	0.908 3	191	0.893 8
117	0.937 4	142	0.922 5	167	0.907 8	192	0.893 2
118	0.936 8	143	0.921 9	168	0.907 2	193	0.892 6
119	0.936 2	144	0.921 3	169	0.906 6	194	0.892 1
120	0.935 6	145	0.920 7	170	0.906 0	195	0.891 5
121	0.935 0	146	0.920 1	171	0.905 4	196	0.890 9
122	0.934 4	147	0.919 5	172	0.904 8	197	0.890 3
123	0.933 8	148	0.918 9	173	0.904 2	198	0.889 8
124	0.933 2	149	0.918 3	174	0.903 7	199	0.889 2
125	0.932 6	150	0.917 7	175	0.903 1	200	0.888 6
126	0.932 0	151	0.917 1	176	0.902 5	201	0.888 0
127	0.931 4	152	0.916 6	177	0.901 9	202	0.887 5
128	0.930 8	153	0.916 0	178	0.901 3	203	0.886 9
129	0.930 2	154	0.915 4	179	0.900 8	204	0.886 3

**Table 904-2 Temperature-Volume Correction Factors
for Bituminous Materials**

Cut-Back Asphalt, Grades RC-T, RC-70, RC-250, MC-30, and MC-250.
Inverted Emulsified Asphalt, Grade IEMC-250.

Temp (°C)	Factor	Temp (°C)	Factor	Temp (°C)	Factor	Temp (°C)	Factor
5	1.007 2	30	0.989 3	55	0.971 7	80	0.954 3
6	1.006 5	31	0.988 6	56	0.971 0	81	0.953 6
7	1.005 7	32	0.987 9	57	0.970 3	82	0.953 0
8	1.005 0	33	0.987 2	58	0.969 6	83	0.952 3
9	1.004 3	34	0.986 5	59	0.968 9	84	0.951 6
10	1.003 6	35	0.985 8	60	0.968 2	85	0.950 9
11	1.002 9	36	0.985 0	61	0.967 5	86	0.950 2
12	1.002 2	37	0.984 3	62	0.966 8	87	0.949 5
13	1.001 4	38	0.983 6	63	0.966 1	88	0.948 8
14	1.000 7	39	0.982 9	64	0.965 4	89	0.948 2
15	1.000 0	40	0.982 2	65	0.964 7	90	0.947 5
16	0.999 3	41	0.981 5	66	0.964 0	91	0.946 8
17	0.998 6	42	0.980 8	67	0.963 3	92	0.946 1
18	0.997 9	43	0.980 1	68	0.962 6	93	0.945 4
19	0.997 1	44	0.979 4	69	0.961 9	94	0.944 7
20	0.996 4	45	0.978 7	70	0.961 2	95	0.944 1
21	0.995 7	46	0.978 0	71	0.960 5	96	0.943 4
22	0.995 0	47	0.977 3	72	0.959 9	97	0.942 7
23	0.994 3	48	0.976 6	73	0.959 2	98	0.942 0
24	0.993 6	49	0.975 9	74	0.958 5	99	0.941 3
25	0.992 9	50	0.975 2	75	0.957 8	100	0.940 7
26	0.992 1	51	0.974 5	76	0.957 1	101	0.940 0
27	0.991 4	52	0.973 8	77	0.956 4	102	0.939 3
28	0.990 7	53	0.973 1	78	0.955 7	103	0.938 6
29	0.990 0	54	0.972 4	79	0.955 0	104	0.937 9

Table 904-2 (Continued)

Temp (°C)	Factor	Temp (°C)	Factor	Temp (°C)	Factor	Temp (°C)	Factor
105	0.937 3	130	0.920 5	155	0.904 0	180	0.887 7
106	0.936 6	131	0.919 8	156	0.903 3	181	0.887 1
107	0.935 9	132	0.919 1	157	0.902 6	182	0.886 4
108	0.935 2	133	0.918 5	158	0.902 0	183	0.885 8
109	0.934 6	134	0.917 8	159	0.901 3	184	0.885 1
110	0.933 9	135	0.917 1	160	0.900 7	185	0.884 5
111	0.933 2	136	0.916 5	161	0.900 0	186	0.883 9
112	0.932 5	137	0.915 8	162	0.899 4	187	0.883 2
113	0.931 9	138	0.915 2	163	0.898 7	188	0.882 6
114	0.931 2	139	0.914 5	164	0.898 1	189	0.881 9
115	0.930 5	140	0.913 8	165	0.897 4	190	0.881 3
116	0.929 8	141	0.913 2	166	0.896 8	191	0.880 7
117	0.929 2	142	0.912 5	167	0.896 1	192	0.880 0
118	0.928 5	143	0.911 8	168	0.895 5	193	0.879 4
119	0.927 8	144	0.911 2	169	0.894 8	194	0.878 7
120	0.927 2	145	0.910 5	170	0.894 2	195	0.878 1
121	0.926 5	146	0.909 9	171	0.893 5	196	0.877 5
122	0.925 8	147	0.909 2	172	0.892 9	197	0.876 8
123	0.925 1	148	0.908 6	173	0.892 2	198	0.876 2
124	0.924 5	149	0.907 9	174	0.891 6	199	0.875 5
125	0.923 8	150	0.907 2	175	0.890 9	200	0.874 9
126	0.923 1	151	0.906 6	176	0.890 3	201	0.874 3
127	0.922 5	152	0.905 9	177	0.889 6	202	0.873 6
128	0.921 8	153	0.905 3	178	0.889 0	203	0.873 0
129	0.921 1	154	0.904 6	179	0.888 4	204	0.872 4

**Table 904-3 Temperature-Volume Correction Factors
for Bituminous Materials**

Emulsified Asphalt, All Grades.

Temp (°C)	Factor	Temp (°C)	Factor	Temp (°C)	Factor
5	1.004 5	31	0.992 8	57	0.981 4
6	1.004 0	32	0.992 3	58	0.981 0
7	1.003 6	33	0.991 9	59	0.980 5
8	1.003 1	34	0.991 4	60	0.980 1
9	1.002 7	35	0.991 0	61	0.979 7
10	1.002 2	36	0.990 5	62	0.979 2
11	1.001 8	37	0.990 1	63	0.978 8
12	1.001 3	38	0.989 7	64	0.978 4
13	1.000 9	39	0.989 1	65	0.977 9
14	1.000 4	40	0.988 8	66	0.977 5
15	1.000 0	41	0.988 4	67	0.977 1
16	0.999 5	42	0.987 9	68	0.976 6
17	0.999 1	43	0.987 5	69	0.976 2
18	0.998 6	44	0.987 1	70	0.975 8
19	0.998 2	45	0.986 6	71	0.975 3
20	0.997 7	46	0.986 2	72	0.974 9
21	0.997 3	47	0.985 8	73	0.974 5
22	0.996 8	48	0.985 3	74	0.974 1
23	0.996 4	49	0.984 9	75	0.973 6
24	0.995 9	50	0.984 4	76	0.973 2
25	0.995 5	51	0.984 0	77	0.972 8
26	0.995 0	52	0.983 6	78	0.972 4
27	0.994 6	53	0.983 1	79	0.972 0
28	0.994 1	54	0.982 7	80	0.971 5
29	0.993 7	55	0.982 3	81	0.971 1
30	0.993 2	56	0.981 8		

SECTION 905 - CONCRETE ADMIXTURES AND CURING MATERIALS

905.02 Chemical Admixtures.

THE FOLLOWING IS ADDED:

Corrosion inhibitor products that are to be used in the fabrication of concrete items shall be as follows:

Calcium Nitrite Based as produced by
W.R. Grace & Company
2133 85th Street
North Bergen, NJ 07047
Telephone: 201-869-5220

Calcium Nitrite Based as produced by
The Euclid Chemical Company
5 Joanna Court
East Brunswick, NJ 08816
Telephone: 732-390-9770

Calcium Nitrite Based as produced by
Master Builders Inc.
798 Welsh Road
Huntingdon Valley, PA 19006
Telephone: 215-938-7501

Calcium Nitrite Based as produced by
SIKA Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Telephone: 800 - 933 - SIKA (7452)

Calcium Nitrite Based as produced by
Great Eastern Technologies, LLC
"Chem Strong CI"
515 Route 528
P. O. Box 3015
Lakewood, NJ 08701
Telephone: 888 - 452 - 9348

SECTION 909 – LANDSCAPING MATERIALS

909.05 Plant Materials.

1. Ball Sizes for Nursery Grown Plant Material

THE FOLLOWING IS ADDED TO THE END OF THIS SUBSECTION

All Narcissus shall be the variety Carlton.

909.10 Topsoil.

A. Unacceptable Topsoil Sources.

ITEM 1. IS CHANGED TO:

1. Soils having less than 4.1 pH value, or greater than 8.0 pH value.

SECTION 910 - MASONRY UNITS

910.07 Granite Facing for Pier Shafts.

THE LAST SENTENCE OF THE LAST PARAGRAPH IS CHANGED TO:

The number of cores to be furnished for such tests shall be six.

SECTION 912 - PAINTS, COATINGS, AND MARKINGS

912.10 Pavements stripes or Markings

C. THERMOPLASTIC

2. For white, the composition of the mixture shall be as follows:

Component	Percent by weight
THE FIRST AND FOURTH SENTENCES ARE CHANGED TO:	
Resin/Binder	22-26 percent
Calcium Carbonate and Inert Fillers (shall not contain silica other than as glass beads)	34-38 percent

3. THE FIRST SENTENCE OF THIS SUBPART IS CHANGE TO:

3. Only yellow non-lead formulas shall be used, the composition of the mixture shall be as follows:

Component	Percent by weight
THE FIRST AND FOURTH SENTENCES ARE CHANGED TO:	
Resin/Binder	22-26 percent
Calcium Carbonate and Inert Fillers (shall not contain silica other than as glass beads)	42-46 percent

912.12 Removable Pavement Marking Tape and Removable Black Line Masking Tape.

THE SUBSECTION HEADING AND SUBPART A IS CHANGED TO:

912.12 Removable Wet Weather Pavement Marking Tape and Removable Black Line Masking Tape.

- A. **Removable Wet Weather Pavement Marking Tape.** The removable wet weather pavement marking tape shall consist of polymeric, conformable backing materials with a retroreflective surface designed to provide retroreflectivity in wet conditions. The underside of the tape shall be precoated with a pressure sensitive adhesive which bonds the tape to the roadway surface so as to be able to withstand traffic immediately after installation. Primers shall be used to promote tape adhesion to the pavement only in accordance with the tape manufacturers recommendations.

Daylight color of the white tape shall be no darker than color No. 37778 of FED-STD-595B. Daylight color of the yellow tape shall conform to the FHWA color tolerance chart for highway yellow.

When measured with an Advanced Retro Technology (ART) model MX-30 handheld retroreflectometer, the tape shall have initial, minimum retroreflectance values conforming to:

Dry Condition – ASTM D 1710

Entrance Angle = 88.76°

Observation Angle (Degrees)	Specific Luminance	
	White	Yellow
1.05	950	500

Note: The angular aperture of both the photoreceptor and the light projector shall be six minutes of arc. The reference axis shall be taken perpendicular to the test sample.

Continuous Wet Condition – ASTM E 2176

Entrance Angle = 88.76°

Observation Angle	Specific Luminance
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<u>(Degrees)</u>	<u>White</u>	<u>Yellow</u>
1.05	750	300

Note: Specific luminance is measured in millicandelas per square foot per foot-candles.

The removable tape shall be capable of being removed manually, intact or in large pieces, at temperatures above 4 °C without the use of solvents, burning, grinding, or blasting. Only tape that has previously received the approval of the Department Bureau of Materials shall be used. Certification of Compliance shall be furnished according to Subsection 106.04.

912.13 Inorganic Zinc Coating System.

A complete coating system of an inorganic zinc-rich primer, a high-build epoxy intermediate coat, and a urethane finish coat shall be selected from one of the approved coating systems listed below. All products for the complete system, including thinners and solvents, shall be from the same manufacturer and shall be as follows, or from the current Bureau of Materials Qualified Paints List (QPL):

<u>Code #</u>	<u>Manufacturer</u>	<u>Primer</u>	<u>Intermediate</u>	<u>Finish</u>
IEU-3	Kop-Coat	No. 701	No. 200 HB Epoxy	No. 1122 BRS
IEU-7	Devoe	Catha-Coat (302 A)	Bar-Rust 235	Devthane 359
IEU-11	Valspar Corporation	MZ-7 Inorganic Zinc Rich, 13-F-12 Green	Val-Chem Hi-Build Epoxy 89 Series	Urethane Enamel V40 Series
IEU-13	Con-Lux	Zinc-Plate 21, Type 2	Epolon Multi-Mill	Acrolon II
IEU-14	Carboline	Carbo Zinc 11 HS	Carboline 893	Carbothane 134 HS
IEU-17	Ameron	Dimetcote 21-9	Amercoat 383 HS	Amercoat 450 HS
IEU-18	Elite Coatings Co.	P-159 Inorganic Zinc Primer	E-375 Polyrox High Build Epoxy	Shinethane Urethane LS-5436/LS-5437
IEU-19	International Protective Coatings	Interzinc 22 HS	Intergard 475 HS	Interthane 990 HS

Drying time between coats shall be per the manufacturer's recommendations.

The following information shall be submitted for the system selected at least one month before painting is anticipated:

1. A 4 liter sample for each coat of paint in the system.
2. Infrared curves (2.5 to 15 micrometers) for each coat. Curves for the dry film of the vehicle (binder) of each component and for the mixed paint shall be included.
3. Weight per liter, at 25 °C, for each coat. Variance shall be within plus or minus 50 grams of the normal weight per liter of the sample that was approved and placed on the QPL.
4. Viscosity in Krebs Units, at 25 °C, for each coat. Variance shall be within plus or minus 5 Krebs Units, or equivalent units of another viscometer, of the viscosity of the sample that was approved and placed on the QPL.
5. Percent of solids by weight of each coat.
6. Percent of metallic zinc by weight in the dry film of the cured zinc primer coat. This percentage shall be greater than or equal to that of the sample that was approved and placed on the QPL.
7. Percent of metallic zinc by weight in the zinc pigment component.
8. Finish coat color chips for selection of color by the Engineer.
9. The required curing time and dry film thickness for the qualification of the zinc primer for slip-critical connections in conformance with the requirements of AASHTO, Division I, Table 10.32.3C for Class of Surface B. A certified test report with the slip coefficient tested according to AASHTO Division 1, Article 10.32.3.2.3.
10. Technical data sheets, MSDS, and specific application instructions for all coats. In the event of a conflict between the data/instruction sheets and these Specifications, with the approval of the Engineer, the manufacturer's requirements shall govern. Work shall not be allowed to proceed until the information is received and approved.
11. Mixing and thinning directions.

12. Recommended spray nozzles and pressures.

The Contractor shall submit the manufacturer's recommended repair procedures to correct damage such as that caused in handling and shipping, deficient or excessive coating thickness, removal of zinc salts and other contaminants that would be detrimental to succeeding coats, and procedures for surface preparation and painting of rust spots.

The Contractor shall provide the services of a paint or a painting technical representative from the paint manufacturer at the beginning of operations and whenever required during operations.

Each container of paint shall be labeled to show the name of the manufacturer, the trade name designation of the contents, the lot or batch number, the date of manufacture, and the volumetric contents in liters or the weight of zinc powder in kilograms. Each container shall be labeled according to the Code of Federal Regulations for flammables and shall contain all information necessary to comply with NJSA 34:5A-1 New Jersey Worker and Community Right To Know Act.

SECTION 913 - PIPE

913.03 Ductile Iron Water Pipe.

THE FIRST SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

Ductile iron water pipe shall conform to ANSI/AWWA C151/A21.51.

SECTION 914 – PORTLAND CEMENT CONCRETE, MORTAR, AND GROUT

914.02 Portland Cement Concrete Design, Control, and Acceptance Testing Requirements.

B. Proportioning and Verification.

THE SECOND SENTENCE OF THE THIRD PARAGRAPH IS CHANGED TO:

At least six 100 by 200-millimeter compression test cylinders shall be prepared from each batch and cured according to AASHTO T 23 or AASHTO T 126.

E. Acceptance Testing for Strength for Pay Adjustment Items. Concrete Pay Items which are subject to pay adjustment and the base prices are as follows:

<u>DESCRIPTION</u>	<u>UNIT</u>	<u>BASE PRICE</u>
CONCRETE IN SUPERSTRUCTURE, DECK SLABS, W/CORR. INHB. ADMIXTURE	CM	\$525.00

SECTION 916 - SIGN MATERIALS

916.10 Breakaway Steel "U" Post Sign Supports.

THE FIRST PARAGRAPH IS CHANGED TO:

Steel "U" post shall be either Ribbak Modified-Flanged channel section as manufactured by Marion Steel Co., Marion, OH or the "U" channel section as manufactured by Highway Steel, Inc., Chicago Heights, IL. The breakaway system shall be the Lap Splice System as manufactured by Marion Steel, Inc. for the Ribbak Modified-Flanged channel section and Safety Splice System as manufactured by Highway Steel, Inc. for the "U" Channel Section, except that the steel "U" posts shall be galvanized after fabrication, including punching and drilling holes, in conformance with ASTM A 123.

SECTION 919 – MISCELLANEOUS

919.07 Fly Ash.

THE FIRST PARAGRAPH IS CHANGED TO:

Fly ash for portland cement concrete shall conform to ASTM C 618, Class C or Class F except that the loss on ignition shall not be more than three percent. Fly ash used to control alkali-silica reactivity shall be Class F and shall comply with Supplementary Optional Chemical Requirements of ASTM C 618, Table 2. Before each source of fly ash is approved, certified results of tests conducted by a testing agency shall be submitted to and verified by the Department. Accompanying the certification shall be a statement from the supplier listing the source and type of coal, the methods used to burn, collect, and store the fly ash, and the quality control measures employed.

THE FOLLOWING NEW SUBSECTION IS ADDED:

919.22 Controlled Low Strength Material (CLSM).

CLSM shall conform to the following:

Fine Aggregate	901.12
Chemical Admixtures	905.02
Portland Cement, Type I, II, III	919.11
Water	919.15

CLSM shall consist of a mixture of portland cement, water, fine aggregate and chemical admixtures. Fly ash shall not be permitted in mixes intended for trench backfilling. The CLSM mixture shall be proportioned to provide a backfill material that is self-compacting and capable of being excavated with hand tools at a later date. CLSM shall be proportioned to produce a 28-day compressive strength of 345 to 1 035 kilopascals. An accelerating admixture shall be used to produce a fast setting flowable mixture as required. The CLSM shall have a permeability of $1.7 \times 10^{-3} \pm 0.2 \times 10^{-3}$ centimeters per second according to ASTM D5084 for backfilling of conduits and piping.

At least 45 days prior to the start of any CLSM placement, trial batches of CLSM shall be prepared of the same materials and proportions proposed for use on the project. Each mix design shall be submitted on portland cement concrete mix design forms furnished by the Department, naming the sources of materials and test data.

Department personnel will be present at the time of verification batching to confirm that the proportions and materials batched are according to the proposed mix designs. At least six 150 X 300 millimeters compression test cylinders shall be prepared for each batch according to ASTM 5971-96 for 28-day strengths except for fast setting mixes, which shall be tested at the specified cure time.

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

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ATTACHMENTS

- A. Employment Preference for Appalachian Contracts
(included in Appalachian contracts only)

I. GENERAL

1. These contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.

3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.

4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:

- Section I, paragraph 2;
- Section IV, paragraphs 1, 2, 3, 4, and 7;
- Section V, paragraphs 1 and 2a through 2g.

5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the DOL, or the contractor's employees or their representatives.

6. **Selection of Labor:** During the performance of this contract, the contractor shall not:

a. discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or

b. employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

II. NONDISCRIMINATION

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.)

1. **Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 *et seq.*) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.

b. The contractor will accept as his operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job training."

2. **EEO Officer:** The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.

3. **Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

d. In the event the union is unable to provide the contractor

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.

b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the SHA and shall set forth what efforts have been made to obtain such information.

with a reasonable flow of minority and women referrals within the

time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.

8. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.

c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.

9. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and

(4) The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. The contractors will submit an annual report to the SHA each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data.

III. NONSEGREGATED FACILITIES

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.)

a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.

b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).

c. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of \$10,000 or more and that it will retain such certifications in its files.

IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

1. General:

a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the

appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraphs 4 and 5 of this Section IV.

b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.

c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

2. Classification:

a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.

b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:

(1) the work to be performed by the additional classification requested is not performed by a classification in the wage determination;

(2) the additional classification is utilized in the area by the construction industry;

(3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

(4) with respect to helpers, when such a classification prevails in the area in which the work is performed.

c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

3. Payment of Fringe Benefits:

a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.

b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

4. Apprentices and Trainees (Programs of the U.S. DOL) and Helpers:

a. Apprentices:

(1) Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.

(2) The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

(3) Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

(4) In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. Trainees:

(1) Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.

(2) The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(3) Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which case such trainees shall receive the same fringe benefits as apprentices.

(4) In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Helpers:

Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV.2. Any worker listed on a payroll at a helper wage rate, who is not a helper under a approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

5. Apprentices and Trainees (Programs of the U.S. DOT):

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

6. Withholding:

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

7. Overtime Requirements:

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. Violation:

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of \$10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. Withholding for Unpaid Wages and Liquidated Damages:

The SHA shall upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

V. STATEMENTS AND PAYROLLS

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are

exempt.)

1. Compliance with Copeland Regulations (29 CFR 3):

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

2. Payrolls and Payroll Records:

a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.

b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof of the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices, trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period). The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;

(2) that such laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;

(3) that each laborer or mechanic has been paid not less than the applicable wage rate and fringe benefits or cash equivalent for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.

f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.

g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR

1. On all Federal-aid contracts on the National Highway System, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than \$1,000,000 (23 CFR 635) the contractor shall:

a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.

b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.

c. Furnish, upon the completion of the contract, to the SHA resident engineer on Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.

2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

VII. SUBLETTING OR ASSIGNING THE CONTRACT

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).

a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the prime contractor.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

VIII. SAFETY: ACCIDENT PREVENTION

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree

of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined not more than \$10,000 or imprisoned not more than 5 years or both."

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$100,000 or more.)

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 *et seq.*, as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 *et seq.*, as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.

3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is

under consideration to be listed on the EPA List of Violating Facilities.

4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

1. Instructions for Certification - Primary Covered Transactions:

(Applicable to all Federal-aid contracts - 49 CFR 29)

a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.

f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the

certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Primary Covered Transactions

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and

d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Covered Transactions:

(Applicable to all subcontracts, purchase orders and other lower tier transactions of \$25,000 or more - 49 CFR 29)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion—Lower Tier Covered Transactions:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 - 49 CFR 20)

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

**ATTACHMENT A - EMPLOYMENT PREFERENCE FOR
APPALACHIAN CONTRACTS**

(Applicable to Appalachian contracts only.)

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph 1c shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph 4 below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification,

(c) the date on which he estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, he shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within 1 week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph 1c above.

5. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION
CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)

1. As used in these Specifications:
 - a. Covered area means the geographical area in which the Project is located.
 - b. Director means Director, Office of Federal Contract Compliance Programs, United States Department of Labor or any person to whom the Director delegates authority.
 - c. Employer identification number means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, US Treasury Department Form 941.
 - d. Minority includes:
 - (1) Black (a person having origins in any of the black African racial groups not of Hispanic origin);
 - (2) Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race);
 - (3) Asian and Pacific Islander (a person having originals in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (4) American Indian or Alaskan Native (a person having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participating or community identification).
2. Whenever the Contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
3. The Contractor shall implement the specific affirmative action standards provided in paragraphs 6a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered Construction Contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. The

Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

4. Neither the provisions of any collective bargaining agreement nor the failure by a union with whom the Contractor has a collective bargaining agreement to refer either minorities or women shall excuse the Contractor's obligations under these Specifications, Executive Order 111246, or the regulations promulgated pursuant thereto.
5. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the US Department of Labor.
6. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:
 - a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The contractor shall specifically ensure that all foreman, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment with specific attention to minority or female individual working at such sites or in such facilities.
 - b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
 - c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred back to the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.
 - d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the contractor a minority person or women sent by the Contractor, or when the Contractor

has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

- e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the source compiles under 6b above.
- f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on site supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news median, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.
- i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
- j. Encourage present minority and female employees to recruit other minority persons and females and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work force.

- k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
 - l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
 - m. Ensure that seniority practices, job classifications, work assignments and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
 - n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
 - o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction Contractor and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
 - p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
7. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (6a through p). The efforts of a Contractor association, joint contractor union, Contractor-Community, or other similar group of which the Contractor is a member and participant may be asserted as fulfilling any one or more of its obligations under 6A through p of these Specifications provided that the Contractor actively participates in the group, make every effort to assure that the group has a positive impact on the employment of minorities and females in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female work force participation, make a good faith effort to meet its individual goals and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.
8. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women both minority and nonminority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the

Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

9. The Contractor shall not use the goals or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
10. The Contractor shall not enter any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
11. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspensions, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246 as amended.
12. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 6 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.
13. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone number, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (such as mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.
14. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (such as those under the Public Works Employment Act of 1977 and the community Development Block Grant Program).
15. Noncompliance by the Contractor with the requirements of the Affirmative Action Program for Equal Employment Opportunity may be cause for delaying or withholding monthly and final payments pending corrective and appropriate measures by the Contractor to the satisfaction of the Department.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL
OPPORTUNITY (EXECUTIVE ORDER 11246)

1. The goals for minority and female participation, in the covered area, expressed in percentage terms for the Contractor's aggregate work force in each trade, on all construction work are as shown on Page 2.

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4. (3) a, and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

2. The Contractor will provide the Department with written notification in triplicate within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification will list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.
3. As used in this Notice and in the Contract resulting from this solicitation the covered area is the county or counties in which the Project is located.
4. If a project is located in more than one county, the minority work hours goal, only, will be determined by the county which serves as the primary source of hiring or, if workers are obtained almost equally from one or more counties, the single minority goal will be the average of the affected county goals.

WORK HOUR GOALS IN EACH TRADE FOR MINORITY AND FEMALE
PARTICIPATION

<u>COUNTY</u>	<u>MINORITY PARTICIPATION PERCENT</u>	<u>FEMALE PARTICIPATION PERCENT</u>
Atlantic	18.2	6.9
Bergen	15.0	6.9
Burlington	17.3	6.9
Camden	17.3	6.9
Cape May	14.5	6.9
Cumberland	16.0	6.9
Essex	17.3	6.9
Gloucester	17.3	6.9
Hudson	12.8	6.9
Hunterdon	17.0	6.9
Mercer	16.4	6.9
Middlesex	15.0	6.9
Monmouth	9.5	6.9
Morris	17.3	6.9
Ocean	17.0	6.9
Passaic	12.9	6.9
Salem	12.3	6.9
Somerset	17.3	6.9
Sussex	17.0	6.9
Union	17.3	6.9
Warren	1.6	6.9

STATE OF NEW JERSEY EQUAL EMPLOYMENT OPPORTUNITY
FOR CONTRACTS FUNDED BY FHWA

The parties to this Agreement do hereby agree that the provisions of NJSA 10:2-1 through 10:2-4 and NJSA 10:5-31 et seq (PL 1975, c 127, as amended and supplemented) dealing with discrimination in employment on public contracts, and the rules and regulations promulgated pursuant thereunto, are hereby made a part of this contract and are binding upon them.

During the performance of this contract, the Contractor agrees as follows:

- a. The Contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status or sex. The Contractor will take affirmative action to ensure that such applicants are recruited and employed, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status or sex. Such action shall include but not be limited to the following: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Department Compliance Officer setting forth provisions of this nondiscrimination clause;
- b. The Contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status or sex;
- c. The Contractor or subcontractor, where applicable, will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the Department of Compliance Officer, advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The notices referred to in paragraphs a and c may be obtained from the Supervising Engineer of Construction or his representative at the preconstruction conference.

DISADVANTAGED BUSINESS ENTERPRISE UTILIZATION ATTACHMENT

FHWA FUNDED CONTRACTS

I. UTILIZATION OF DISADVANTAGED CONTRACTS, MATERIALS SUPPLIERS
AND EQUIPMENT LESSORS.

The New Jersey Department of Transportation advises each Contractor or subcontractor that failure to carry out the requirements set forth in this attachment shall constitute a breach of contract and, after the notification of the applicable federal agency, may result in termination of the agreement or contract by the Department or such remedy as the Department deems appropriate. Requirements set forth in this section shall also be physically included in all subcontracts in accordance with USDOT requirement.

II. POLICY.

It is the policy of the New Jersey Department of Transportation that Disadvantaged Business Enterprises, as defined in 49 CFR Part 23, the Surface Transportation and Uniform Relocation Assistance Acts (STURRA) of 1987, and Section V, Part B below, shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with federal funds under this agreement. Consequently, the DBE requirements of 49 CFR Part 23, Subsections C and D apply to this agreement.

III. DBE OBLIGATION.

The New Jersey Department of Transportation and its Contractor agree to ensure that Disadvantaged Business Enterprises, as defined in 49 CFR Part 23, Subsection C, and the Surface Transportation and Uniform Relocation Assistance Act (STURRA) of 1987, and Section V, Part B below, have the maximum opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with federal funds provided under this agreement. In this regard, the New Jersey Department of Transportation and all Contractors shall take all necessary and reasonable steps in accordance with 49 CFR, Part 23 to ensure that Disadvantaged Business Enterprises have the maximum opportunity to compete for and perform contracts. The New Jersey Department of Transportation and its Contractors shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of USDOT assisted contracts.

IV. COMPLIANCE.

To signify and affirm compliance with the provisions of this attachment, the bidder shall complete the disadvantaged certification included in the Proposal and all forms and documents required in Sections VII and VIII of these provisions which will be made a part of the resulting contract.

V. GOALS FOR THIS PROJECT.

A. This Project includes a goal of awarding **16**. percent of the total contract value to subcontractors, equipment lessors and/or material suppliers which qualify as Disadvantaged Business Enterprises.

1. Failure to meet the minimum goal placed on this Project may be grounds for rejection of the bid as nonresponsive.
2. As a source of information only, a Disadvantaged Business Enterprise Directory is available from the Office of Civil Rights Compliance. Use of this listing does not relieve the Contractor of the responsibility to seek out DBE's not listed, prior to bid.

B. DEFINITIONS.

1. Disadvantaged Business Enterprise is defined as: a small business concern, independently owned and operated, with an annual gross income of less than \$14,000,000.00, over a three year period, not dominant in its field of operation, and which is owned and controlled by one or more disadvantaged individuals.
2. Owned and Controlled is defined as: a firm which is at least fifty-one (51%) percentum owned by one or more disadvantaged individuals, or, in the case of a publicly owned business, at least fifty-one (51%) percentum of the stock of which is owned by one or more disadvantaged individuals, and whose management and daily business operations are controlled by one or more such individuals.
3. Disadvantaged Business Enterprise Participation is defined as follows:
 - a. An individual who is a citizen or lawfully admitted permanent resident of the United State and who is:
 1. Black (a person having origins in any of the black racial groups of Africa);
 2. Hispanic American (a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race);
 3. Asian American (a person having origins in any of the original peoples of the Far East, Southwest Asia, the Indian subcontinent or Pacific Islands, regardless of race);
 4. American Indian and Alaskan Native (a person having origins in any of the original peoples of North America);

5. Female, regardless of race:
6. Members of other Groups, or other individuals found to be economically and socially disadvantaged by the Small Business Administration under Section 8(a) of the Small Business Act as amended (15 UDC 637) (a)).

VI. COUNTING DBE PARTICIPATION.

- A. Each DBE is subject to a certification procedure to ensure its DBE status prior to the award of contract. In order to facilitate this process it is advisable for the bidder to furnish names of proposed DBE's to the Department before bid opening. Once a firm is determined to be a bona fide DBE by the Office of Civil Rights Compliance, the total dollar value of the contract awarded to the DBE is counted toward the applicable DBE goal.
- B. No Text.
- C. The Contractor may count toward its DBE goal only expenditures to DBE's that perform a commercially useful function in the work of a contract. A DBE is considered to perform a commercially useful function when it is responsible for execution of a distinct element of the work of a contract and carrying out is responsibility by actually performing, managing and supervising the work involved. To determine whether a DBE is performing a commercially useful function, the Contractor shall evaluate the amount of work subcontracted, industry practice and other relevant factors.
- D. If the Contractor is a certified DBE, payments made to the Contractor for work performed by the Contractor will be applied toward the DBE goal. Payments made to the Contractor for work performed by non-DBE's will not be applied toward the goal.
- E. The Contractor may count 60 percent of its expenditures to DBE suppliers that are not manufacturers, provided that the DBE supplier performs a commercially useful function in the supply process.

VII. GOOD FAITH EFFORT.

To demonstrate sufficient reasonable efforts to meet the DBE contract goals, a bidder shall document the steps it has taken to obtain DBE participation, including but not limited to the following:

- A. Attendance at a pre-bid meeting, if any, scheduled by the Department to inform DBE's of subcontracting opportunities under a given solicitation;

- B. Advertisement in general circulation media, trade association publications, and minority-focus media for at least 20 days before bids are due. If 20 days are not available, publication for a shorter reasonable time is acceptable;
- C. Written notification to DBE's that their interest in the contract is solicited;
- D. Efforts made to select portions of the work proposed to be performed by DBE's in order to increase the likelihood of achieving the stated goal;
- E. Efforts made to negotiate with DBE's for specific subbids including at a minimum:
 - 1. The names, addresses and telephone numbers of DBE's that were contracted;
 - 2. A description of the information provided to DBE's regarding the plans and specifications for portions of the work to be performed; and
 - 3. A statement of why additional agreements with DBE's were not reached;
- F. Information regarding each DBE the bidder contacted and rejected as unqualified and the reasons for the bidder's conclusion;
- G. Efforts made to assist the DBE in obtaining bonding or insurance required by the bidder or the Department.

VIII. AFFIRMATIVE ACTION PLANS.

- A. General contractors are required to submit their firms' Affirmative Action Program annually to the Office of Civil Rights Compliance no later than September 1 of each year. Until such time as these programs are submitted and approved, contractors must have their programs in the Office of Civil Rights Compliance no later than 7 State business days after the date of receipt of bids.
- B. This program will include, but is not limited to the following:
 - 1. The name of the liaison officer to administer the Contractor's Disadvantaged Business Enterprise Program.
 - 2. An explanation of affirmative action methods used in seeking out and considering Disadvantaged Business Enterprises as subcontractors, material suppliers or equipment lessors.
 - 3. An explanation of affirmative action methods intended to be used in seeking out and considering Disadvantage Business Enterprises as subcontractors, material suppliers or equipment lessors. This refers to the Contractors ongoing

responsibility i.e., Disadvantaged Business Enterprise/Affirmative Action Activities after the award of the contract and for the duration of said project.

C. The following shall be submitted either with the bid or to the Office of Civil Rights Compliance no later than 7 State business days after the date of receipt of bids.

1. DBE Form A – Schedule of DBE Participation. List all DBE's which will participate in the contract including scope of work, dollar value and percent of total contract to be performed.
2. DBE Form B – Affidavit of Disadvantaged Business Enterprise. Each proposed DBE not listed in the NJDOT DBE directory must submit Form B attesting to its validity as an DBE. (All firms must be certified by the Department's DBE liaison officer prior to award of the contract).
3. Request for Exemption – In the event that the bidder fails to meet the specified goal, he/she must submit, within seven State business days of the bid, a written request for exemption to the goal. This request must include a written statement addressing items A. through G. in Article VII of this attachment in addition to an accounting of the reason(s) why each item in the bid proposal was not subcontracted. Submittal of such request does not imply Departmental approval. An assessment of the material will be conducted by the Department's Office of Civil Rights Compliance.

D. The State Highway Engineer will be the sole judge of proper compliance and action taken in fulfilling the requirements as set forth herein.

IX. AFFIRMATIVE ACTION AFTER AWARD OF THE CONTRACT.

If, at any time following the award of contract, the Contractor intends to sublet any portion(s) of the work under said contract, or intends to purchase material or lease equipment not contemplated during preparation of bids, said Contractor shall take affirmative action:

1. To notify the Resident Engineer, in writing, of the type of approximate value of the work which the Contractor intends to accomplish by such subcontract, purchase order or lease.
2. To signify and affirm compliance with the provisions of this Section, the Contractor shall submit the Post-Award DBE Certification Form to the Regional Supervising Engineer with his application to sublet or prior to purchasing material or leasing equipment. Post-Award DBE Forms may be obtained from the Resident Engineer.
3. To give disadvantaged firms equal consideration with non-minority firms in negotiations for any such subcontracts, purchase orders or leases.

X. CONSENT BY DEPARTMENT TO SUBLETTING.

The Department will not approve any subcontract proposed by the Contractor unless and until said Contractor has complied with the terms of this attachment.

XI. SELECTION AND RETENTION OF SUBCONTRACTORS.

- A. The Contractor is further obligated to provide the Resident Engineer with a listing of firms, organizations or enterprises solicited and those utilized as subcontractors on the proposed project. Such listing shall clearly delineate which firms are classified as disadvantaged.
- B. Efforts made to identify and retain a Disadvantaged Business Enterprise as a substitution subcontractor when the arrangements with the original DBE proved unsuccessful shall be submitted in writing to the Department's DBE liaison officer for approval. Work in the category concerned shall not begin until such approval is granted in writing.
- C. Notification of the subcontractor's termination will be sent to the Department by the Contractor through the Resident Engineer. Said termination notice will include the subcontractor's ethnic classification and reason for termination.

XII. CONCILIATION.

In cases of alleged discrimination regarding these and all equal employment opportunity provisions and guidelines, investigations and conciliation will be undertaken by the office of Compliance in conjunction with the Office of Civil Rights Compliance of the New Jersey Department of Transportation and the Federal Highway Administration.

XIII. DOCUMENTATION.

- A. The Department or the federal funding agencies may at any time require such information as is deemed necessary in the judgment of the Department to ascertain the compliance of any bidder or contractor with the terms of these provisions.
- B. Record and Reports.

The Contractor shall keep such records as are necessary to determine compliance with its Disadvantaged Business Enterprise Utilization obligations. The records kept by the Contractor will be designed to indicate:

- 1. The names of disadvantaged subcontractors, equipment lessors and material suppliers contracted for work on this project.

2. The type of work to be done, materials to be utilized or services to be performed by other than the prime contractor on the project.
 3. The dollar value of work awarded to DBE's.
 4. The progress and efforts being made in seeking out/utilizing Disadvantaged Business Enterprises. This would include solicitations, quotes and bids regarding project work items, supplies, leases, etc.
 5. Documentation of all correspondence, contacts, telephone calls, etc., to obtain the services of Disadvantaged Business Enterprises on this Project.
- C. Submit reports, as required by the Department, on those contracts and other business transactions executed with Disadvantaged Business Enterprises in such form and manner as may be prescribed by the Department.
- D. All such records must be maintained for a period of 3 years following acceptance of final payment and will be available for inspection by the Department.

XIV. PAYMENT TO SUBCONTRACTORS.

The Contractors agrees to pay subcontractors in accordance with Subsections 109.05, and 109.07 of the 1996 Standard Specifications as amended by the 1998 Supplemental Specifications.

Failure of the bidder to comply with these provisions may result in rejection of the bid. The Contractor may further be declared ineligible for future Department contracts.

INCENTIVE PROGRAM DISADVANTAGED BUSINESS ENTERPRISE UTILIZATION
ATTACHMENT FOR FHWA FUNDED CONTRACTS

I. PURPOSE.

To ensure that certified Disadvantaged/Women Owned Business Enterprises collectively called (D. WBE's), as defined in 49 CFR Part 23, have the maximum opportunity to compete for and perform on Department construction projects.

II. INTENT.

To encourage prime contractors to utilize the services of D/WBE's who have not previously been prime contractors or subcontractors on Department projects, and afford D/WBE's the opportunity to again experience in Department construction contract work.

III. ELIGIBILITY.

Only prime contractor and D/WBE's certified prior to the date of bid, or prospective D/WBE's that have submitted to the Office of Civil Rights/Contract Compliance on or before the day of bid a completed "New Jersey Department of Transportation Disadvantaged Business Enterprise Disclosure Affidavit" (PR-131) and all required documentation and have never been either prime contractor or subcontractor on Department construction projects will be eligible for participation in this program. A list of those eligible D/WBE's will be available from the Office of Civil Rights/Contract Compliance. Any bidder who submits the name of a certified first-time D/WBE as part of its goal commitment is also eligible. Any D/WBE participating in the program must submit to the prime contractor a certification that they have never been either a prime contractor or subcontractor on a Department construction project under their present name or any other name. The prime contractor shall submit this certification with their required D/WBE submission.

IV. INCENTIVE.

Prime contractors utilizing first-time D/WBE's will be given a credit toward their goal percentage identified in companion document "DISADVANTAGED BUSINESS ENTERPRISE UTILIZATION ATTACHMENT FOR FHWA FUNDED CONTRACTS", dated September 1987, revised January 1989, September 1992 and May 1995, equal to the actual dollar amount subcontracted to a first time D/WBE with the total project credit limited to two percent (2%) of the total bid price but not to exceed \$200,000. This extra credit will reduce the goal percentage award as well as be applicable to the reduced goal percentage.

V. PROGRAM REQUIREMENTS.

- A. A prime contractor may present any number of first time D/WBE's for each project. Credit will be given only for the actual amount subcontracted up to the limits established in IV above.
- B. The prime contractor shall be responsible for the entire D/WBE goal percentage established for the project.
- C. Failure to use a first time D/WBE shall cause the original goal award percentage prior to applying first time D/WBE credits to remain in effect.
- D. Failure to meet the goal award percentage, coupled with a lack of good faith effort as determined by the Office of Civil Rights/Contract Compliance, will be considered to be non-compliance on the part of the prime contractor who may be placed in show cause and subsequently be grounds for rejection of the bid as nonresponsive.

EQUAL EMPLOYMENT OPPORTUNITY SPECIAL PROVISIONS

1. General

- a. Equal employment opportunity requirements not to discriminate and to take affirmative action to assure equal employment opportunity as required by Executive Order 11246 and Executive Order 11375 are set forth in Required Contract Provisions (Form FHWA-1273) and these Special Provisions which are imposed pursuant to Section 140 of Title 23 USC, as established by Section 22 of the Federal Aid Highway Act of 1968. The requirements set forth in these Special Provisions shall constitute the specific affirmative action requirements for project activities under this contract and supplement the Equal Employment Opportunity requirements set forth in the Required Contract Provisions.
- b. The Contractor will work with the State agencies and the Federal Government in carrying out Equal Employment Opportunity obligations and in their review of activities under the contract.
- c. The Contractor and all subcontractors holding subcontracts, not including material suppliers, of \$10,000 or more, will comply with the following minimum specific requirement activities of Equal Employment Opportunity. The Contractor will include these requirements in every subcontract of \$10,000 or more with such modification of language as is necessary to make them binding on the subcontractor. (The equal employment opportunity requirements of Executive Order 11246, as set forth in Volume 6, Chapter 4, Section 1, Subsection 1 of the Federal-Aid Highway Program Manual, are applicable to material suppliers as well as contractors and subcontractors).
- d. Noncompliance by the Contractor with the requirements of the Affirmative Action Program for Equal Employment Opportunity may be cause for delaying or withholding monthly and final payments pending corrective and appropriate measures by the Contractor to the satisfaction of the Department.

2. Equal Employment Opportunity Policy

The Contractor will accept as its operating policy the following statement which is designed to further the provisions of equal employment opportunity to all persons without regard to their race, color, religion, sex, or national origin, and to promote the full realization of equal employment opportunity through a positive continuing program:

It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, or national origin. Such action shall include employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and on-the-job training.

3. Equal Employment Opportunity Officer

The Contractor will designate and make known to the Department contracting officers an equal opportunity officer (hereinafter referred to as the EEO Officer) who will have the capability, authority and responsibility to effectively implement and promote an active contractor program of equal employment opportunity.

4. Dissemination of Policy

a. All members of the Contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommended such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the Contractor's equal employment opportunity policy and contractual responsibilities to provide equal employment opportunity in each grade and classification of employment. To ensure compliance, the following minimum actions will be taken:

- (1) An initial project site meeting with key supervisory and office personnel will be conducted before or at the start of work, and then not less than once every 6 months, at which time the Contractor's equal employment opportunity program will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.
- (2) All new supervisory and office personnel will be given a thorough indoctrination by the EEO Officer or other knowledgeable company official covering all major aspects of the Contractor's equal employment opportunity obligations within 30 days following their reporting for duty with the Contractor.
- (3) All personnel engaged in direct recruitment for the project will be instructed by the EEO Officer or appropriate company official concerning the Contractor's procedures for locating and hiring minority and female employees.

b. In order to make the Contractor's equal employment opportunity policy known to all employees, prospective employees and potential sources of employees, i.e., schools, employment agencies, labor unions (where appropriate), college placement officers, etc., the Contractor will take the following actions:

- (1) Notices and posters setting forth the Contractor's equal employment opportunity policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
- (2) The Contractor's equal employment opportunity policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, and/or other appropriate means.

5. Recruitment

- a. When advertising for employees, the Contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer". All such advertisements will be published in newspapers or other publications having a large circulation among minority groups in the area from which the project work force would normally be derived.
- b. The Contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority and female applicants, including, but not limited to, State employment agencies, schools, colleges and minority-oriented organizations. To meet this requirement, the Contractor will, through his EEO Officer, identify sources of potential minority and female employees, and establish procedures with such sources whereby applicants may be referred to the Contractor for employment consideration.

In the event the Contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the Contractor's compliance with the equal employment opportunity contract provisions. (The US Department of Labor has held that where implementation of such agreements have the effect of discriminating against minorities or females, or obligates the Contractor to do the same, such implementation violates Executive Order 11246, as amended).

- c. The Contractor will encourage his present employees to refer minority and female applicants for employment by posting appropriate notices or bulletins in areas accessible to all such employees. In addition, information and procedures pertaining to the referral of applicants will be discussed with employees.

6. Personnel Actions

Wages, working conditions and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, or national origin. The following procedures shall be

followed:

- a. The Contractor will conduct a project site inspection at the start of work, and periodically thereafter, to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
- b. The Contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
- c. The Contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the Contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
- d. The Contractor will promptly investigate all complaints of alleged discrimination made to the Contractor in connection with its obligations under this contract, and will resolve or attempt to resolve such complaints, within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, corrective action shall include such other persons. Upon completion of each investigation, the Contractor will inform complainants of available avenues of appeal.

7. Training Special Provisions

As part of the Contractor's equal employment opportunity affirmative action program, training shall be provided as follows:

The Contractor shall provide on-the-job training aimed at developing full journeypeople in the type of craft or job classification involved.

The number of training positions will be 9, where feasible consisting of at least 5 apprentices and 4 apprentice graduates of the Pre-Apprenticeship Training Cooperative Program, sponsored by the signatories of the October 26, 1994 Memorandum of Understanding, and/or trainees.

Apprentices are defined as registered members of an approved apprenticeship program recognized by the United States Department of Labor (USDOL) Bureau of Apprenticeship and Training (BAT) or a New Jersey State apprenticeship agency recognized by USDOL BAT (e.g., New Jersey Department of Education). Graduates of the Pre-Apprenticeship Training Cooperative Program shall be classified as apprentices. Trainees are defined as skilled, semi-skilled or lower level management individuals receiving training per one of the approved NJDOT "Revised Standard Training Guidelines" (available from the Division of Civil Rights).

Where feasible, at least 50% of the training positions will be assigned to Skilled Crafts which include but are not limited to Carpenters, Dockbuilders, Electricians, Ironworkers and Operating Engineers.

a. Contractor Submission and NJDOT Approval of the Initial Training Program.

At or after the preconstruction conference and prior to the start of work, the Contractor shall submit a training program to the Resident Engineer for his or her review and comments prior to Division of Civil Rights review and approval. The Contractor's training program shall include:

- (1) the number of trainees or apprentices to be trained in all selected Training Positions,
- (2) the Standard Program Hours for all positions,
- (3) an estimate of the Minimum Available Hours actually feasible on the project toward completion of the Standard Program Hours per position,
- (4) a training schedule of Estimated Start Dates for the apprentices or trainees, developed and coordinated with the project's work progress schedule,
- (5) Training Guidelines for all positions, and
- (6) which training will be provided by the Contractor and which by Subcontractors.

The number of apprentices and trainees shall be distributed among the work classifications on the basis of the Contractor's needs and the availability of journeypeople in the various crafts within a reasonable area of recruitment. The Contractor shall submit timely, revised training programs as required throughout the project to ensure that feasible and Maximum Available Training is provided. Maximum Available Training is defined as bringing each apprentice or trainee onto the project when work first becomes available in his/her craft and providing all available training until hours are no longer available.

b. Assignment of Training to Subcontractors

In the event that portions of the contract work are subcontracted, the Contractor shall determine how many, if any, of the apprentices or trainees are to be trained by subcontractors, provided, however, that the Contractor shall retain the primary responsibility for meeting the training requirements imposed by these Training Special Provisions. The Contractor shall also ensure that these Training Special Provisions are made applicable to such subcontracts.

c. Requirements for Recruitment, Selection and Approval of Apprentices and Trainees

- (1) Apprentices or trainees should be in their first year of apprenticeship or training. The Contractor shall interview and screen trainee candidates to determine if their actual work experience is equivalent to or exceeds that offered by the training program prior to submitting candidates, via the Resident Engineer, to the Division for review and approval or disapproval.
- (2) Training and upgrading of minorities (e.g., Blacks, Asians or Pacific Islanders, Native Americans or Alaskan Natives, Hispanics) and females toward journeyman status is a primary objective of these Training Special Provisions. Accordingly, the Contractor shall make every effort to enroll minorities and females, by conducting systematic and direct recruitment through public and private sources likely to yield minority and female apprentices or trainees, to the extent that such persons are available within a reasonable area of recruitment. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.
- (3) No employee shall be employed as an apprentice or trainee in any position in which he or she has successfully completed a training course leading to journeyman status or in which he or she has been employed as a journeyman. The Contractor shall satisfy this requirement by including appropriate questions in the employment application or by other suitable means and by submitting an accurate and complete "Apprentice/Trainee Approval Memorandum." Regardless of the methods used, the Contractor's records should document the findings in each case.
- (4) Skilled craft trainees may complete up to 3,000 total training hours on NJDOT projects, with an extension of an additional 1,000 hours permitted on a case-by-case basis. Semi-skilled and lower-level management trainees attain journeyman status upon completion of a training guideline and may complete up to three (3) different positions.

d. Apprenticeship and Training Programs

- (1) The minimum length and type of training for each position will be established in the training program selected by the Contractor and approved by NJDOT and the Federal Highway Administration. NJDOT will approve a program if it is reasonably calculated to meet the equal employment opportunity obligations of the Contractor and to qualify the average apprentice or trainee for journeyman status in the craft concerned by the end of the training period.
- (2) Apprenticeship programs registered with the US Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by USDOL BAT and training programs approved but

not necessarily sponsored by the US Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided such programs are being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the NJDOT Division of Civil Rights prior to commencing work on the positions covered by the Contractor's training program. The Division will review guidelines developed by the Contractor for approval or disapproval in accordance with the Training Guideline Approval Process described in the "Revised Standard Training Guidelines". The Division will also review existing guidelines for revision based on the same process.

- (3) It is the intention of these provisions that training be provided in construction crafts rather than clerk-typist or secretarial-type positions. Training is permitted in lower level management positions (e.g., timekeepers), where the training is oriented toward project site applications. Training in semi-skilled laborer positions is permitted provided that significant and meaningful training is available on the project site. Some offsite, classroom training (e.g., safety, first aid instruction) may be permitted as long as such training is an integral part of an approved training program and does not comprise a significant part of the overall training.

e. Reimbursement of the Contractor for Providing Training

- (1) The Contractor will be credited for each apprentice or trainee employed on the construction site who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such apprentices or trainees as provided hereinafter. Payment will be made under the pay item Trainees at the bid price in the Proposal per person-hour of training given an employee on this contract in accordance with an approved training program. If approved, payment will be made for training persons in excess of the number specified herein. This reimbursement will be made even though the Contractor receives additional training program funds from other sources, provided such other sources do not specifically prohibit the Contractor from receiving other reimbursement. Offsite, classroom training reimbursement may only be made to the Contractor when the company does one or more of the following and the apprentices or trainees are concurrently employed on a Federal-aid project: contributes to the cost of the training and/or provides instruction to apprentices or trainees or pays their wages during the offsite, classroom training (e.g., safety, first aid instruction) period.

- (2) The Contractor shall pay apprentices and trainees according to the project-specific New Jersey Department of Labor Prevailing Wage Rate Determination for the project.
- f. Documentation Required to be Signed by Apprentices or Trainees and provided to NJDOT
- (1) At the start of training, the Contractor shall provide the Resident Engineer and each apprentice or trainee with an applicable "Training Guideline" and, at the conclusion of training, an accurate and complete "Training Certificate for Reporting Hours to NJDOT", showing hours of training satisfactorily completed.
 - (2) The Contractor shall maintain and submit an accurate and complete "NJDOT Contractor's 1409 Quarterly Training Report" to the Resident Engineer within ten (10) days of the end of each training quarter (e.g., January 10, April 10, July 10, October 10); a copy shall also be given to each apprentice or trainee.
 - (3) The Contractor shall maintain and submit accurate and complete "Biweekly Training Reports" to the Resident Engineer, and each apprentice or trainee, as periodic reports documenting performance under these Training Special Provisions.
- g. Training and Promotion
- (1) The Contractor shall assist in locating, qualifying, and increasing the skills of minority and female employees, and applicants for employment.
 - (2) The Contractor shall advise employees and applicants for employment of available training programs and entrance requirements.
 - (3) The Contractor shall periodically review the training and promotion potential of minority and female employees and encourage eligible employees to apply for such training and promotion.
- h. Determining Good Faith Compliance
- (1) Per the approved program or guideline, the Contractor shall provide Maximum Available Training to apprentices and trainees by beginning their training as soon as feasible with the start of craft work utilizing the skill involved on the project construction site and by retaining them as long as training opportunities exist in their crafts or until their training program positions are completed.

- (2) The Contractor shall recall apprentices or trainees released due to reductions in force when the work scope permits and they are available to return. When they are unavailable to resume training on the project site, the Contractor shall submit written proof of recall efforts and replacement candidates and/or positions in a timely manner. The Contractor shall not terminate apprentices or trainees prior to completion of their training program positions without NJDOT consultation and authorization. Apprentices or trainees are not required to be on board for the entire length of the contract.
- (3) The Contractor shall have fulfilled the contractual responsibilities under these Training Special Provisions if the company has provided Acceptable Training to the number of apprentices or trainees specified in this contract and/or by providing the remaining hours required to complete training positions begun by apprentices or trainees on other projects. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.
- (4) The Contractor shall be responsible for demonstrating all steps that have been taken in pursuance of enrolling minorities and females in the training program positions, prior to a determination as to whether the Contractor is in compliance with these Training Special Provisions.
- (5) The Contractor shall submit to the Resident Engineer written training program summaries at the 50% time and/or cost stage of the contract and also prior to project completion, describing all good faith actions and particularly addressing Maximum Available Training for incomplete training positions, per the procedure found in the revised "Instructions for Implementing the Training Special Provisions".

i. Enforcement Measures and Contractor's Rating

- (1) Payment will not be made if either the failure to provide the required training or the failure to hire the apprentice or trainee as a journey person is caused by the Contractor and evidences a lack of good faith on the part of the Contractor in meeting the requirements of these Training Special Provisions.
- (2) Per established procedures and scheduled Contract Compliance Reviews, the Contractor's performance will be rated and reviewed periodically by the Department.
- (3) Noncompliance with these Training Special Provisions may be cause for delaying or withholding monthly and final payments, pending corrective and appropriate measures by the Contractor to the satisfaction of the Department, per Item 1d of these EEO Special Provisions.

8. Unions

If the Contractor relies in whole or in part upon unions as a source of employees, the Contractor will make maximum effort to obtain the cooperation of such unions to increase opportunities for minorities and females within the unions, and to effect such union referrals to the construction project. Actions by the Contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

- a. The Contractor will use maximum effort to develop, in cooperation with the unions, joint training programs aimed at qualifying more minorities and females for union membership and increasing their skills in order to qualify for higher paying employment.
- b. The Contractor will use maximum effort to incorporate an equal employment opportunity clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, or national origin.
- c. The Contractor will obtain information concerning the referral practices and policies of the labor unions except that to the extent such information is within the exclusive possession of the labor unions and they refuse to furnish this information to the Contractor, the Contractor shall so certify to the Department and shall set forth what efforts have been made to obtain this information.
- d. In the event the unions are unable to provide the Contractor with a reasonable flow of minority and female referrals within the time limit set forth in the collective bargaining agreement, the Contractor will through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, or national origin, making full efforts to obtain qualified and/or qualifiable minorities and females. (The US Department of Labor has held that it shall be no excuse that the union with which the Contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees). In the event the union referral practice prevents the Contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such Contractor shall immediately notify the Department.

9. Subcontracting

- a. The Contractor will use maximum effort to solicit bids from and to utilize minority subcontractors or subcontractors with meaningful minority and female representation among their employees. Contractors may use lists of minority-owned construction firms as issued by the Department.

- b. The Contractor will use maximum effort to ensure subcontractor compliance with the equal employment opportunity obligations.

10. Documents and Reports

- a. The Contractor will maintain such documents as are necessary to determine compliance with the contract's equal employment opportunity requirements. Documents will include the following:
 - (1) the number of minorities, non-minorities, and females employed in each work classification on the Project.
 - (2) the progress and efforts being made in cooperation with unions to increase employment opportunities for minorities and females (applicable only to Contractors who rely in whole or in part on unions as a source of their work force).
 - (3) the progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees, and
 - (4) the progress and efforts being made in securing the services of minority and female subcontractors or subcontractors with meaningful minority and female representation among their employees.
- b. All such documents must be retained for a period of 3 years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the Department and the Federal Highway Administration.
- c. The Contractor and each subcontractor will complete and submit monthly, except July, to the Department Form T-AD-1276 Monthly Project Manning Report. The FHWA-1391 July report is of special interest to the Department and FHWA; therefore it must be submitted to the Resident Engineer not later than 5 calendar days following the end of July. Payments due the Contractor will be reduced by \$100 per day for each day after August 5 that the 1391 Form has not been submitted.

SPECIAL CONTRACT PROVISIONS FOR INVESTIGATING, REPORTING
AND RESOLVING EMPLOYMENT DISCRIMINATION AND SEXUAL
HARASSMENT COMPLAINTS

The contractor hereby agrees to the following requirements in order to implement fully the nondiscrimination provisions of the Supplemental Specifications.

The Contractor agrees that in instances when it receives from any person working on the project site a verbal or written complaint of employment discrimination, prohibited under N.J.S.A. 10:5-1 et seq., 10:2-1 et seq., 42 U.S.C. 2000(d) et seq., 42 U.S.C. 2000 (e) et seq. and Executive Order 11246, it shall take the following actions:

1. Within one (1) working day commence an investigation of the complaint which shall include but not be limited to interviewing the complainant, the respondent, and all possible witnesses to the alleged act or acts of discrimination or sexual harassment.
2. Prepare and keep for its use and file a detailed written investigative report which includes the following information:
 - a) Investigatory activities and findings.
 - b) Dates and parties involved and activities involved in resolving the complaint.
 - c) Resolution and corrective action taken if discrimination or sexual harassment is found to have taken place.
 - d) A signed copy of resolution of complaint by complainant and contractor.

In addition to keeping in its files the above-noted detailed written investigative report, the contractor shall keep for possible future review by the Department all other records, including but not limited to, interview memos and statements.

3. Upon the request of the Department, provides to the Department within ten (10) calendar days a copy of its detailed written investigative report and all other records on the complaint investigation and resolution.
4. Take appropriate disciplinary action against any contractor employee, official or agent who has committed acts of discrimination or sexual harassment against any contractor employee or person working on the project. If the person committing the discrimination is a subcontractor employee, then the contractor is required to attempt to effectuate corrective and/or disciplinary action by the subcontractor in order to establish compliance with project's contract requirements.

5. Take appropriate disciplinary action against any contractor employee, official or agent who retaliates, coerces or intimidates any complaint and/or person who provides information or assistance to any investigation of complaints of discrimination or sexual harassment. If the person retaliating, coercing or intimidating a complainant or other person assisting an investigation is a subcontractor's employee, then the contractor is required to attempt to effectuate corrective and/or disciplinary action by the subcontractor in order to establish compliance with the project's contract requirements.
6. Ensure to the maximum extent possible that the privacy interests of all person who give confidential information in aid of the contractor's employment discrimination investigation are protected.

In conjunction with the above requirements, the contractor shall develop and post a written sexual harassment policy for its work force.

Failure by the contractor to comply with the above requirements may be cause for the New Jersey Department of Transportation to institute against the contractor any and all enforcement proceedings and/or sanctions authorized by the contract or by state and/or federal law.

SECTION 02082

ENVIRONMENTAL HAZARDS ABATEMENT

PART 1

1 - GENERAL

- A. The scope of work will require all asbestos containing materials to be abated in the identified building. The following table is a general reference list of ACM identified in the building. This general reference list is not all-inclusive. The intent of this list and abatement work is to remove the asbestos from an area and make the area "asbestos-free".

Parcel 25 350 Browertown Road West Paterson, NJ			
ACM	Location	Approximate Quantity	Percent Asbestos
Lower roof flashing	Lower roof	180 sq. ft.	10% Chrysotile
Shingles with tar	Lower roof	20 sq. ft.	1.3% Chrysotile
Tar paper with tar	Upper roof	1,400 sq. ft.	30% Chrysotile
Upper roof flashing	Upper roof	165 sq. ft.	10% Chrysotile

Parcel 57 665 Union Boulevard Totowa, NJ			
ACM	Location	Approximate Quantity	Percent Asbestos
Roof flashing	Roof	900 sq. ft.	2.1% Chrysotile

- B. **L. Robert Kimball and Associates, Inc. (Kimball)** is New Jersey Department of Transportation Consultant for this project. The Contractor shall notify Kimball prior to commencement of any work. Point of contract for Kimball is *Daniel Davis* and can be reached at the office (412) 262-5400, cell phone (412) 327-3320, faxed at (412) 262-3036 or e-mailed at davidd@lrkimball.com.

1.1 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

B. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

1. ANSI Z9.2 (1979; R 1991) Fundamentals Governing the Design and Operation of Local Exhaust Systems
2. ANSI Z88.2 (1992) Respiratory Protection
American Society For Testing And Materials (ASTM)
3. ASTM C 732 (1982; R 1987) Aging Effects of Artificial Weathering on Latex Sealants
4. ASTM D 522 (1993; Rev. A) Mandrel Bend Test of Attached Organic Coatings
5. ASTM D 1331 (1989) Surface and Interfacial Tension of Solutions of Surface-Active Agents
6. ASTM D 2794 (1993) Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
7. ASTM E 84 (1994) Surface Burning Characteristics of Building Materials
8. ASTM E 96 (1994) Water Vapor Transmission of Materials
9. ASTM E 1368 (1990) Visual Inspection of Asbestos Abatement Projects

C. CODE OF FEDERAL REGULATIONS (CFR)

1. 29 CFR 1910.134 Respiratory Protection
2. 29 CFR 1926.51 Sanitation
3. 29 CFR 1926.200 Accident Prevention Signs and Tags
4. 29 CFR 1926.59 Hazard Communication
5. 29 CFR 1926.451 Scaffolding

6. 29 CFR 1926.1101 Asbestos, Tremolite, Anthophyllite, Actinolite
 7. 40 CFR 61-SUBPART A General Provisions
 8. 40 CFR 61-SUBPART M National Emission Standard for Asbestos
 9. 40 CFR 763 Asbestos Containing Material in Schools
 10. 49 CFR 171 and 172 DOT regulations for the transportation of asbestos-containing materials
- D. ENVIRONMENTAL PROTECTION AGENCY (EPA)
1. EPA 560/5-85-024 Guidance for Controlling Asbestos Containing Materials in Buildings
- E. UNDERWRITERS LABORATORIES INC. (UL)
1. UL 586 (1990) High-Efficiency, Particulate, Air Filter Units
- F. STATE OF NEW JERSEY
1. Uniform Construction Code Act. (New Jersey S.A. 52-17D-119 et.seq., P.L. 1984)
 2. Asbestos Control and Licensing Act. (NJSA 34:5A-32 et.seq., P.L. 1984)
 3. Asbestos Hazard Abatement Subcode for Educational Facilities - Subchapter 8. N.J.A.C. 5:23-8 New Jersey Department of Community Affairs Division of Housing and Development Bureau of Construction Code Enforcement CN 816 Trenton, New Jersey 08625-0816.
 4. Asbestos Licenses and Permits N.J.A.C. 12:120-1,2,3,5,7 and 8:60-1,2,3,4,5,7 New Jersey Department of Labor Division of Workplace Standards CN 504 Trenton, New Jersey 08625-0504.
 5. Asbestos Training Courses N.J.A.C. 8:60-2 and 6, 12:120-2 and 6 New Jersey Department of Health Asbestos Control Project, Training Unit CN 360 Trenton, NJ 08625-0360
 6. Solid Waste Management Act. (NJSA 13:1E-1, 13:109, et.seq., as amended)

7. Disposal Regulations N.J.A.C. 7:26 New Jersey Department of Environmental Protection, Division of Waste Management, Bureau of Field Operations CN 028 Trenton, NJ 08625-0805.
8. Control and Prohibition of Air Pollution by Toxic Substances, New Jersey Department of Environmental Protection, N.J.A.C. Title 7, Chapter 27, Subchapter 17, effective date: December 17, 1979.
9. Asbestos Subchapter of the New Jersey Safety and Health Standards for Public Employees, N.J.A.C. 12:100 et.seq.

1.2 DEFINITIONS

A. ACM

1. Asbestos Containing Materials. Any material or product which contains more than one (1) percent asbestos.

B. Aggressive Air Sampling Techniques

1. Air monitoring samples collected while leaf blowers, fans, or other such devices are used to generate air turbulence within the work area.

C. Amended Water

1. Water containing a wetting agent or surfactant with a maximum surface tension of 2.9 Pa (29 dynes per square centimeter) when tested in accordance with ASTM D 1331.

D. Area Sampling

1. Sampling of asbestos fiber concentrations which approximates the concentrations of asbestos in the theoretical breathing zone but is not actually collected in the breathing zone of an employee.

E. Asbestos

1. The term asbestos includes Chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, and actinolite asbestos and any of these minerals that has been chemically treated or altered. Materials are considered to contain asbestos if the asbestos content of the material is determined to be at least one percent.

F. Asbestos Control Area

1. That area where asbestos removal operations are performed which is isolated by physical boundaries, which assist in the prevention of the uncontrolled release of asbestos dust, fibers, or debris.
- G. Asbestos Fibers
1. Those fibers having an aspect ratio of at least 3:1 and longer than 5 micrometers as determined by National Institute for Occupational Safety and Health (NIOSH) Method 7400.
- H. Asbestos Permissible Exposure Limit (PEL)
1. 0.1 fibers per cubic centimeter of air as an 8-hour time weighted average measured in the breathing zone as defined by 29 CFR 1926.1101 or other Federal legislation having legal jurisdiction for the protection of workers health.
- I. **Authority**
1. **New Jersey Department of Transportation.**
- J. Background
1. The ambient airborne asbestos concentration in an uncontaminated area as measured prior to any asbestos hazard abatement efforts. Background concentrations for other (contaminated) areas are measured in similar but asbestos free locations.
- K. Contractor
1. The Contractor is that individual, or entity under contract to the Authority to perform the herein listed work.
- L. Encapsulation
1. The abatement of an asbestos hazard through the appropriate use of chemical encapsulants.
- M. Encapsulants
1. Specific materials in various forms used to chemically or physically entrap asbestos fibers in various configurations to prevent these fibers from becoming airborne. There are four types of encapsulants as follows which must comply with performance requirements as specified herein.
 - a. Removal Encapsulant (can be used as a wetting agent)

- b. Bridging Encapsulant (used to provide a tough, durable surface coating to asbestos containing material)
- c. Penetrating Encapsulant (used to penetrate the asbestos containing material encapsulating all asbestos fibers and preventing fiber release due to routine mechanical damage)
- d. Lock-Down Encapsulant (used to seal off or "lock-down" minute asbestos fibers left on surfaces from which asbestos containing material has been removed).

N. Friable Asbestos Material

- 1. Any material greater than one percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure when dry.

O. HEPA Filter Equipment

- 1. High efficiency particulate air (HEPA) filtered vacuum and/or exhaust ventilation equipment with a filter system capable of collecting and retaining asbestos fibers. Filters shall retain 99.97 percent of particles 0.3 microns or larger as indicated in UL 586.

P. Negative Pressure Enclosure (NPE)

- 1. That engineering control technique described as a negative pressure enclosure in 29 CFR 1926.1101.

Q. Non-friable Asbestos Material

- 1. Any material that contains more than one percent asbestos in which the fibers have been immobilized by a bonding agent, coating, binder, or other material so that the asbestos is well bound and will not normally release asbestos fibers during any appropriate use, handling, storage or transportation. Non-friable materials are defined as either:
 - a. Category I - means asbestos containing packing, gaskets, resilient floor coverings and asphalt roofing products.
 - b. Category II - any material, excluding Category I non-friable ACM, containing more than one percent asbestos such as transite, galbestos and window caulking.

R. Powered Air Purifying Respirator (PAPR)

1. A positive-pressure respirator which employs a portable, rechargeable battery pack and blower to force air from the work area through a HEPA filter cartridge, where the air is cleaned and supplied to the wearer's breathing zone.

S. Personal Sampling

1. Air sampling which is performed to determine asbestos fiber concentrations within the breathing zone of a specific employee, as performed in accordance with 29 CFR 1926.1101.

T. Qualified Person (QP)

1. That qualified person hired by the Contractor to perform the required contractor's tasks, who has successfully completed training and is therefore accredited under a legitimate State Model Accreditation Plan as described in 40 CFR 763 as a Building Inspector, Contractor/Supervisor Abatement Worker, and Asbestos Project Designer; and has successfully completed the National Institute of Occupational Safety and Health (NIOSH) 582 course "Sampling and Evaluating Airborne Asbestos Dust" or equivalent. The QP must be qualified to perform visual inspections as indicated in ASTM E 1368. The QP shall be appropriately licensed in the State of New Jersey.

U. Regulated ACM

1. Friable asbestos containing material, category I non-friable ACM that has become friable, Category I non-friable ACM that will be or has been subject to sanding, grinding, cutting, or abrading, or Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by NESHAP.

V. Authority's Consultant (AC)

1. **That qualified person employed directly by the Authority to monitor, sample, and inspect the work or in some other way advises the Authority. The AC is normally a private consultant hired by the Authority and is L. Robert Kimball and Associates, Inc. (Kimball). Point of contract for Kimball is *Daniel Davis* and can be reached at (412) 262-5400, cell phone (412) 327-3320, or faxed at (412) 262-3036.**

W. Time Weighted Average (TWA)

1. The TWA is an 8-hour time weighted average airborne concentration of asbestos fibers.

X. Wetting Agent

1. A chemical added to water to reduce the water's surface tension thereby increasing the water's ability to soak into the material to which it is applied. An equivalent wetting agent must have a surface tension of at most 2.9 Pa (29 dynes per square centimeter) when tested in accordance with ASTM D 1331.

1.3 REQUIREMENTS

A. Special Conditions

1. The Contractor shall be responsible for compliance with any and all OSHA, EPA, and New Jersey regulations as referenced in these Specifications. Furthermore, the Contractor shall at all times conform to any additional requirements set forth in these Specifications where they may be more stringent than the minimum required by regulation. The Authority or AC, and their employees or designated representatives assume no responsibility for the management of or control over the Contractor's safety and health program activities. The Contractor shall ensure that his safety and health programs comply with all applicable regulations and adequately protect the well-being of his employees.
2. The Contractor shall pay all license fees and royalties and assume all cost fees and cost incidents to the use in the performance of the work of any invention, design, process patent, or device which is the patent rights or copyrights held by the other. The Contractor shall indemnify and hold harmless the Authority and the AC and anyone directly or indirectly employed by any of them from and against all claims, damages, losses, and expenses (including attorney's fees) arising out of any infringement of patent rights or copyrights incident to the use in the performance of this work or resulting from the incorporation in the work of any invention, design, process, product, or device. This indemnification and hold harmless obligation shall be separate from and independent of any other obligations of the contractor to indemnify and hold the Authority and the AC and anyone directly or indirectly employed by them harmless from and against all claims, cost, obligations, or expenses.

B. Regulatory Compliance

1. The Contractor shall assume full responsibility and liability for compliance with all applicable Federal, New Jersey, and County regulations pertaining to work practices, hauling, disposal, and protection of the site. The

Contractor is responsible for providing medical examinations and maintaining records of personnel as required by the applicable Federal, New Jersey, and County regulations. The Contractor shall hold the Authority and AC harmless for failure to comply with any applicable work, hauling, disposal, safety, health, or other regulations on the part of himself, his employees, or his subcontractors.

C. Asbestos Removal - Documentation And Notification

1. Permits and Notification

- a. The Contractor will prepare all notifications required by the New Jersey, and EPA based upon these Specifications, and will submit them to the appropriate agency. Send written notification required by N.J.A.C. 5:23-8 to the Department of Community Affairs within three (3) days of issuance of the construction permit for asbestos abatement. Send notification to:

New Jersey Department of Community Affairs
Division of Codes and Standards
Bureau of Code Services
Asbestos/Lead Safety Unit
101 South Broad Street
PO Box 816
Trenton, NJ 08625-0816

- b. The Contractor shall obtain all permits required by Federal, New Jersey, and/or County regulatory agencies or jurisdictions for the transportation and disposal of asbestos-containing materials. The removal of asbestos shall require a construction permit in accordance with N.J.A.C. 5:23-8.5. Additionally, a demolition permit must be obtained pursuant to N.J.A.C. 5:23-2.
- c. The Contractor shall post one copy of all permits at the work site and keep on file at the Contractor's office one copy of each.
- d. The Contractor shall submit written certification to the AC prior to the commencement of work that the required permits, site location, and arrangements for transportation and disposal of asbestos-containing wastes have been made.

2. Contractor Documentation

- a. The Contractor shall submit copies of all transport manifests, trip tickets and disposal receipts to the AC for all asbestos-containing

wastes removed from the property, within ten (10) days of such removal.

- b. The Contractor shall submit documentation to the AC prior to the commencement of work that the contractor's employees, including foreman, supervisors, and any other company personnel or agents who may be exposed to airborne asbestos have received the following:
 - (1) Training as required by OSHA 29 CFR 1926.1101 (k) (3).
 - (2) Medical surveillance as required by OSHA 20 CFR 1926.1101(m) and have been determined by a physician to be physically able to wear required respiratory protection.
 - (3) Respirator fit testing as required by OSHA 29 CFR 1926.1101 (h) (4).
 - (4) New Jersey Asbestos and Permits.
- c. The Contractor shall submit to the AC prior to the commencement of Work the names and Social Security numbers of the Contractor's employees, as defined in Section 1.3.3.
- d. The Contractor shall submit the identity and qualifications of his designated "competent person" to be on-site during removal work as required by OSHA 29 CFR 1926.1101 (e) (6) (ii) and the individual or firm that will be conducting his employee exposure monitoring as required by OSHA 29 CFR 1926.1101 (f) to the AC prior to the commencement of work.
- e. The Contractor shall have in his possession, on-site, copies of the above referenced regulations, as well as, a copy of the Contractor's asbestos training and work practices manual, written respirator program, and these Specifications.
- f. The Contractor shall maintain a daily log within the Decontamination Unit documenting the dates and times of the following items: visitations; authorized and unauthorized Personnel; by name, entering and leaving the work area.
- g. The QP shall maintain a daily project logbook documenting the following:
 - (1) Meetings: purpose, attendees, discussion (brief)

- (2) Inspection of work area; preparation, prior to start of removal and daily, thereafter
- (3) Special or unusual events, i.e., barrier breaching, equipment failures
- (4) Removal of any polyethylene barriers
- (5) Contractor's inspections prior to encapsulation or removal
- (6) Quantity of asbestos abatement completed
- (7) Personal air monitoring results
- (8) Removal of waste materials from work area
- (9) Decontamination of equipment (list items)
- (10) Contractor final inspection

3. Licenses

- a. Maintain current licenses as required by applicable Federal, and New Jersey regulatory agencies or jurisdictions for the removal, transporting, disposal, and/or other regulated activity relative to the work of this contract.
- b. Posting and Filing of Licenses: Maintain two (2) copies of applicable Federal, and New Jersey licenses described above. Post one copy of each at the job site and keep on file in Subcontractor's office one copy of each.

D. Description of Work

- 1. The work covered by this section includes the handling and control of asbestos containing materials and describes some of the resultant procedures and equipment required to protect workers, the environment and occupants of the building or area, or both, from contact with airborne asbestos fibers. The work also includes the disposal of any asbestos containing materials generated by the work. More specific operational procedures shall be outlined in the Asbestos Hazard Abatement Plan called for elsewhere in this specification. The scope of work will require all asbestos containing materials to be abated in the identified building. The following table is a general reference list of ACM identified in the building. This general reference list is not all-inclusive. The intent of this list and abatement work is to remove the asbestos from an area and make the area "asbestos-free".

Parcel 25 350 Browertown Road West Paterson, NJ			
ACM	Location	Approximate Quantity	Percent Asbestos
Lower roof flashing	Lower roof	180 sq. ft.	10% Chrysotile
Shingles with tar	Lower roof	20 sq. ft.	1.3% Chrysotile
Tar paper with tar	Upper roof	1,400 sq. ft.	30% Chrysotile
Upper roof flashing	Upper roof	165 sq. ft.	10% Chrysotile

Parcel 57 665 Union Boulevard Totowa, NJ			
ACM	Location	Approximate Quantity	Percent Asbestos
Roof flashing	Roof	900 sq. ft.	2.1% Chrysotile

2. The Contractor shall be required to remove all asbestos containing debris associated with the above referenced materials. Under normal conditions non-friable or chemically bound materials containing asbestos would not be considered hazardous; however, this material may release airborne asbestos fibers during the demolition and therefore must be handled in accordance with the removal and disposal procedures as specified herein.
3. The Contractor shall not damage areas outside of their work areas. Close coordination with the Authority and AC is required.

E. Medical Requirements

1. Provide medical requirements including but not limited to medical surveillance and medical record keeping as listed in 29 CFR 1926.1101.
 - a. Medical Examinations
 - 1) Before exposure to airborne asbestos fibers, provide workers with a comprehensive medical examination as required by 29 CFR 1926.1101 or other pertinent New Jersey or County directives. This requirement must have been satisfied within the 12 months prior to the start of work on this contract. The same medical examination shall

be given on an annual basis to employees engaged in an occupation involving asbestos and within 30 calendar days before or after the termination of employment in such occupation. Specifically identify x-ray films of asbestos workers to the consulting radiologist and mark medical record jackets with the word "ASBESTOS."

b. Medical Records

- 1) Maintain complete and accurate records of employees' medical examinations, medical records, and exposure data for a period of 50 years after termination of employment and make records of the required medical examinations and exposure data available for inspection and copying to: The Assistant Secretary of Labor for Occupational Safety and Health (OSHA), or authorized representatives of them, and an employee's physician upon the request of the employee or former employee.

F. Training

1. Train all personnel involved in the asbestos control work in accordance with United States Environmental Protection Agency (USEPA), Asbestos Hazard Emergency Response Act (AHERA) training criteria or New Jersey training criteria whichever is more stringent. The Contractor shall document the training by providing: dates of training, training entity, course outline, names of instructors, and qualifications of instructors upon request by the Authority. Furnish each employee with respirator training and fit testing as required by 29 CFR 1926.1101. Fully cover engineering and other hazard control techniques and procedures.

G. Permits, Licenses, and Notifications

1. Obtain necessary permits and licenses in conjunction with asbestos removal, encapsulation, hauling, and disposition, and furnish notification of such actions required by Federal and New Jersey authorities prior to the start of work. Notify the United States Environmental Protection Agency (USEPA) Region 2, and the AC in writing 10 working days prior to commencement of work in accordance with 40 CFR 61-SUBPART M.

H. Environment, Safety and Health Compliance

1. In addition to detailed requirements of this specification, comply with those applicable laws, ordinances, criteria, rules, and regulations of Federal and New Jersey authorities regarding handling, storing, transporting, and disposing of asbestos waste materials. Comply with the

applicable requirements of the current issue of 29 CFR 1926.1101, 40 CFR 61-SUBPART A, and 40 CFR 61-SUBPART M. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting the work. Where the requirements of this specification, applicable laws, rules, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirement shall apply. The following laws, ordinances, criteria, rules and regulations regarding removal, handling, storing, transporting and disposing of asbestos materials apply:

- a. OSHA
- b. EPA
- c. DOT
- d. NJAC
- e. NJDEP

I. Respirator Program

- 1. Establish and implement a respirator program as required by ANSI Z88.2, 29 CFR 1926.1101, and 29 CFR 1926.103. Submit a written description of the program to the AC.

J. Asbestos Hazard Control Supervisor

- 1. The Contractor shall be represented on site by a supervisor, trained using the model Contractor accreditation plan as indicated in the Federal statutes for all portions of the herein listed work.

K. Hazard Communication

- 1. Adhere to all parts of 29 CFR 1926.59 and provide the AC with a copy of the Material Safety Data Sheets (MSDS) for all materials brought to the site.

L. Contingency Plans and Arrangements

- 1. Prepare a contingency plan for emergencies including, but not limited to, fire, accident, failure of power, failure of air filtration system, or any other event that may occur. Include specific procedures to ensure safe exiting and to provide medical attention in the event of an emergency. Post the telephone numbers and locations of emergency services including fire, ambulance, hospital, police, and power company.

1.4 SUBMITTALS

Submit the following.

A. SD-02, Manufacturer's Catalog Data

1. Vacuums
2. Respirators
3. Amended water
4. Material Safety Data Sheets (MSDS) for all materials proposed for transport to the project site
5. Encapsulants
6. Fire Extinguishers
7. Scaffolding

B. SD-08, Statements

1. Asbestos hazard abatement plan
2. Testing laboratory
3. Private qualified person documentation
4. Landfill approval
5. Employee training
6. Medical certification requirements
7. Waste shipment records and if applicable exemption report
8. Respiratory Protection Program
9. Hazardous waste manifest

a. **Asbestos Hazard Abatement Plan**

- 1) **Submit a detailed plan of the safety precautions such as lockout/tagout, fall protection, first aid, and confined**

space entry procedures and equipment and work procedures to be used in the removal and demolition of materials containing asbestos. The plan shall be prepared, signed, and sealed by the Contractor. Such plan shall include but not be limited to the precise personal protective equipment to be used including, but not limited to, respiratory protection, type of whole-body protection, the location of asbestos control areas including clean and dirty areas, buffer zones, showers, storage areas, change rooms, removal method, interface of trades involved in the construction, sequencing of asbestos related work, disposal plan, type of wetting agent and asbestos sealer to be used and a detailed description of the method to be employed in order to control environmental pollution. The plan shall also include (both fire and medical emergency) response plans and the location and use of fire extinguishers. The Asbestos Hazard Abatement Plan must be approved in writing prior to starting any asbestos work. The Contractor shall meet with the AC prior to beginning work, to discuss in detail the Asbestos Hazard Abatement Plan, including work procedures and safety precautions. Once approved by the AC, the plan will be enforced as if an addition to the specification. The AC prior to starting work shall identify any changes required in the specification as a result of the plan specifically in the plan to allow for free discussion and approval.

b. Testing Laboratory

- 1) Submit the name, address, and telephone number of each testing laboratory selected for the analysis, and reporting of airborne concentrations of asbestos fibers along with evidence that each laboratory selected holds the appropriate New Jersey license and/or permits and certification that each laboratory is American Industrial Hygiene Association (AIHA) accredited and that persons counting the samples have been judged proficient by current inclusion on the AIHA Asbestos Analysis Registry (AAR) and successful participation of the laboratory in the Proficiency Analytical Testing (PAT) Program. Where analysis to determine asbestos content in bulk materials or transmission electron microscopy is required, submit evidence that the laboratory is accredited by the National Institute of Science and

Technology (NIST) under National Voluntary Laboratory Accreditation Program (NVLAP) for asbestos analysis.

c. Qualified Person Documentation

- 1) Submit the name, address, and telephone number of the Qualified Person (QP) selected to prepare the Asbestos Hazard Abatement Plan, direct monitoring and training, and documented evidence that the QP has successfully completed training in and is accredited and where required is certified as, a Building Inspector, Contractor/Supervisor Abatement Worker, and Asbestos Project Designer as described by 40 CFR 763 or has successfully completed the National Institute of Occupational Safety and Health (NIOSH) 582 course "Sampling and Evaluating Airborne Asbestos Dust" or equivalent. The QP shall be appropriately licensed in the State of New Jersey.

d. Landfill Approval

- 1) Submit written evidence that the landfill for disposal is approved for asbestos disposal by the USEPA and New Jersey regulatory agency(s). Submit to the AC, waste shipment records, prepared in accordance with Federal regulations, signed and dated by an agent of the landfill, certifying the amount of asbestos materials delivered to the landfill, within 3 days after delivery.

e. Employee Training

- 1) Submit certificates signed by each employee indicating that the employee has received training in the proper handling of materials and wastes that contain asbestos in accordance with 40 CFR 763 and New Jersey requirements; understands the health implications and risks involved, including the illnesses possible from exposure to airborne asbestos fibers; understands the use and limits of the respiratory equipment to be used; and understands the results of monitoring of airborne quantities of asbestos as related to health and respiratory equipment as indicated in 29 CFR 1926.1101 on an initial and annual basis.

f. Medical Certification

- 1) Provide a written certification for each worker and supervisor, signed by a licensed physician indicating that

the worker and supervisor has met or exceeded all of the medical prerequisites listed herein and in 29 CFR 1926.1101 and 29 CFR 1926.103 as prescribed by law.

g. Respiratory Protection Program

- 1) Submit a written program manual or operating procedure including methods of compliance with regulatory statutes.

C. SD-12, Field Test Reports

1. Air sampling results
2. Asbestos disposal quantity report
3. Clearance sampling

a. Air Sampling Results

1. Complete fiber counting and provide results to the QP and AC for review within 16 hours of the "time off" of the sample pump. Notify the AC immediately of any airborne levels of asbestos fibers in excess of the acceptable limits. Submit sampling results to the AC and the affected Contractor employees where required by law within 3 working days, signed by the testing laboratory employee performing air sampling, the employee that analyzed the sample, and the QP and AC.

D. SD-13, Certificates

1. Show compliance with ANSI Z9.2 by providing manufacturers' certifications.
 - a. Vacuums
 - b. Water filtration equipment
 - c. Ventilation systems
 - d. Other equipment used to contain airborne asbestos fibers
 - e. Chemical encapsulants sealers

E. SD-18, Records

1. Notifications
2. Rental equipment
3. Respirator program records
4. Permits and licenses
 - a. Notifications
 - 1) Notify the AC, New Jersey and other appropriate Government agencies in writing 10 working days prior to the start of asbestos work as indicated in applicable laws, ordinances, criteria, rules, and regulations.
 - b. Rental Equipment
 - 1) Provide a copy of the written notification to the rental company concerning the intended use and possible asbestos contamination of the equipment.
 - c. Respirator Program Records
 - 1) Submit records of the respirator program as required by ANSI Z88.2, 29 CFR 1926.103, and 29 CFR 1926.1101.

PART 2

2- PRODUCTS

2.1 ENCAPSULANTS

Shall conform to current USEPA requirements, shall contain no toxic or hazardous substances as defined in 29 CFR 1926.59, and shall conform to the following performance requirements.

A. Removal Encapsulants

<u>Requirement</u>	<u>Test Standard</u>
Flame Spread-25, Smoke Emission-50	ASTM E 84
Life Expectancy-20 years	ASTM C 732 Accelerated Aging Test
Permeability-Minimum 0.4 perms	ASTM E 96

B. Lock-down Encapsulant

<u>Requirement</u>	<u>Test Standard</u>
Flame Spread:25, Smoke Emission-50	ASTM E 84
Life Expectancy: 20 years	ASTM C 732 Accelerated Aging Test
Permeability: Minimum 0.4 perms	ASTM E 96
Fire Resistance: Negligible affect on fire resistance rating over 3 hour test (Tested with fireproofing over encapsulant applied directly to steel member)	ASTM E 119
Bond Strength: 1459 N of force/meter (100 pounds of force/foot) (Tests compatibility with cementitious and fibrous fireproofing)	ASTM E 736

PART 3

3 - EXECUTION

3.1 EQUIPMENT

At all times, provide the AC, with at least two complete sets of personal protective equipment as required for entry to and inspection of the asbestos control area. Provide manufacturers' certificate of compliance for all equipment used to contain airborne asbestos fibers.

A. Respirators

1. The Contractor shall administer a respiratory protection program as required by OSHA (29 CFR 1910.134). The Contractor shall provide individual respirators, from those approved by the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services, for each employee. The Contractor shall require all employees to wear Powered Air Purifying Respirators (PAPR) inside the work area for the duration of the project, or unless acceptable levels have been established through air sampling, as performed by the AC. The Contractor shall require that respiratory protection be used at all times there is any possibility of disturbance of asbestos-containing materials

whether intentional or accidental, until the area has been cleared for re-occupancy. The Contractor shall not allow the use of single-use, disposal respirators for any purpose.

a. Respirators for Handling Asbestos

- 1) Provide personnel engaged in pre-cleaning, cleanup, handling, removal and demolition of asbestos materials with respiratory protection as indicated in 29 CFR 1926.1101 and 29 CFR 1926.103.

B. Exterior Whole Body Protection

1. Outer Protective Clothing

- a. Provide personnel exposed to asbestos with disposable "non-breathable," whole body outer protective clothing, head coverings, gloves, and foot coverings. Provide disposable plastic or rubber gloves to protect hands. Cloth gloves may be worn inside the plastic or rubber gloves for comfort, but shall not be used alone. Make sleeves secure at the wrists, make foot coverings secure at the ankles, and make clothing secure at the neck by the use of tape.

2. Work Clothing

- a. Provide cloth work clothes for wear under the outer protective clothing and foot coverings and either dispose of or properly decontaminate them as recommended by the AC after each use.

3. Eye Protection

- a. Provide goggles to personnel engaged in asbestos abatement operations when the use of a full face respirator is not required.

C. Personal Decontamination

1. Provide a temporary, negative pressure unit with a separate decontamination room and clean room with a shower that complies with 29 CFR 1926.1101. Provide a separate decontamination area for personnel required to don and doff whole body protective clothing. Keep street clothing and street shoes a clean area. HEPA vacuum and remove asbestos contaminated disposable protective clothing while still wearing respirators at the boundary of the asbestos work area and seal in impermeable bags or containers for disposal.

D. Warning Signs and Labels

1. Provide warning signs printed in English at all approaches to asbestos control areas. Locate signs at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area. Provide labels and affix to all asbestos materials, scrap, waste, debris, and other products contaminated with asbestos.

- a. Warning Sign

- 1) Provide vertical format conforming to 29 CFR 1926.200, and 29 CFR 1926.1101 minimum 20 by 14 inches displaying the following legend in the lower panel:

Legend	Notation
Danger	1-inch Sans Serif Gothic or Block
Asbestos	1-inch Sans Serif Gothic or Block
Cancer and Lung Disease Hazard	¼ inch Sans Serif Gothic or Block
Authorized Personnel Only	¼ inch Gothic
Respirators and Protective Clothing Are Required in this Area	¼ inch Gothic

- 2) Spacing between lines shall be at least equal to the height of the upper of any two lines.

- b. Warning Labels

- 1) Provide labels conforming to 29 CFR 1926.1101 of sufficient size to be clearly legible, displaying the following legend:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
BREATHING ASBESTOS DUST MAY
CAUSE SERIOUS BODILY HARM

- E. Tools

1. Vacuums shall be leak proof to the filter and equipped with HEPA filters. Filters on vacuums shall conform to ANSI Z9.2 and UL 586. Do not use power tools to remove asbestos containing materials unless the tool is equipped with effective, integral HEPA filtered exhaust ventilation systems. Remove all residual asbestos from reusable tools prior to storage or reuse.

F. Rental Equipment

1. If rental equipment is to be used, furnish written notification to the rental agency concerning the intended use of the equipment and the possibility of asbestos contamination of the equipment.

3.2 WORK PROCEDURE

A. Asbestos abatement

1. Perform asbestos related work in accordance with 29 CFR 1926.1101, 40 CFR 61-SUBPART M, NJAC 5:23-8 and as specified herein. Use wet removal procedures. Personnel shall wear and utilize protective clothing and equipment as specified herein. Eating, smoking, drinking, chewing gum, tobacco, or applying cosmetics shall not be permitted in the asbestos work or control areas. Personnel of other trades not engaged in the removal and demolition of asbestos containing material shall not be exposed at any time to airborne concentrations of asbestos unless all the personnel protection and training provisions of this specification are complied with by the trade personnel. If an asbestos fiber release or spill occurs outside of the asbestos control area, stop work immediately, correct the condition to the satisfaction of the AC including clearance sampling, prior to resumption of work.
2. Worker Protection
 - a. All persons entering the work area shall wear disposable coveralls and NIOSH-approved respirators with HEPA filters. Workers will remove protective equipment prior to leaving the work area and proceed to a remote shower facility for final decontamination.

B. Protection of Existing Work to Remain

1. Perform work without damage or contamination of adjacent work. Where such work is damaged or contaminated as verified by the AC using visual inspection or sample analysis, it shall be restored to its original condition or decontaminated by the Contractor at no expense to the Authority as deemed appropriate by the AC. This includes inadvertent spill of dirt, dust, or debris in which it is reasonable to conclude that asbestos may exist. When these spills occur, stop work immediately. Then clean up the spill. When satisfactory visual inspection and air sampling results are obtained, work may proceed at the discretion of the AC.

C. Asbestos Control Area Requirements

1. Scaffolding

- a. The use of scaffolding is required by the Contractor to access the asbestos-containing materials. All scaffolding shall be erected in accordance with OSHA standard 29 CFR 1926.451. No scaffold shall be erected, moved, dismantled, or altered except under the supervision of competent persons.

D. Removal Procedures

1. Wet asbestos material with a fine spray of amended water during removal, cutting, or other handling, so as to reduce the emission of airborne fibers. Remove material and immediately place in 6-mil plastic disposal bags. Remove asbestos containing material in a gradual manner, with continuous application of the amended water or wetting agent in such a manner that no asbestos material is disturbed prior to being adequately wetted. Where unusual circumstances prohibit the use of 6-mil plastic bags, submit an alternate proposal for containment of asbestos fibers to the AC for approval. Asbestos containing material shall be containerized while wet. At no time shall asbestos material be allowed to accumulate or become dry. Lower and otherwise handle asbestos containing material as indicated.

For roofing materials, provide a drop cloth below work area. The drop cloth should be below work area to catch any debris generated during removal. Set up ladder or scaffolding if needed. Seal over penetrations, air intakes or windows in the work area with polyethylene sheeting. Spray roofing material with amended water prior to start of removal. Maintain roofing material in a wet condition throughout removal. Do not cut, abrade or break roofing material. Start at top of removal area, remove nails, or cut nails with a flat sharp nail cutter. Pry up edge of roofing material until edges can be gripped by hand. Remove roofing material and immediately place in 6-mil plastic disposal bags. Remove asbestos containing material in a gradual manner, with continuous application of the amended water or wetting agent in such a manner that no asbestos material is disturbed prior to being adequately wetted. Where unusual circumstances prohibit the use of 6-mil plastic bags, submit an alternate proposal for containment of asbestos fibers to the AC for approval. Asbestos containing material shall be containerized while wet. At no time shall asbestos material be allowed to accumulate or become dry. Lower and otherwise handle asbestos containing material as indicated in 40 CFR 61-SUBPART M. Continue removing roofing material using this procedure. Clean up any debris or dust using HEPA vacuuming and wet wiping.

E. Air Sampling

1. Sampling of airborne concentrations of asbestos fibers shall be performed in accordance with 29 CFR 1926.1101, NJAC 5:23-8 and as specified herein. The QP shall perform sampling performed in accordance with 29 CFR 1926.1101. Sampling performed for environmental and quality control reasons shall be performed by the AC. Unless otherwise specified, use NIOSH Method 7400 for sampling and analysis. The Authority may duplicate monitoring. If the air sampling results obtained by the Authority differ from those results obtained by the Contractor, the Authority will determine which results predominate.

a. Sampling Prior to Asbestos Work

- 1) Provide area air sampling and establish the baseline one day prior to the masking and sealing operations for each removal site. Establish the background by performing area sampling in similar but uncontaminated sites in the building.

b. Sampling During Asbestos Work

- 1) The QP shall provide personal sampling as indicated in 29 CFR 1926.1101 and governing regulations. At the same time the AC will provide area sampling close to the work area. In addition, provided the same type of work is being performed, the AC will provide area sampling once every work shift close to the work inside the work area and outside the work. If sampling outside the enclosure shows airborne levels have exceeded background or 0.01 fibers per cubic centimeter, whichever is greater, stop all work, and correct the condition(s) causing the increase. Where alternate methods are used, perform personal and area air sampling at locations and frequencies that will accurately characterize the evolving airborne asbestos levels.

F. Lock-Down

1. The Contractor shall request a pre-sealant inspection prior to removal of barriers and after pre-clearance clean up of gross contamination. The QP and AC shall conduct a visual inspection of all areas affected by the removal in accordance with ASTM E 1368 and NJAC 5:23-8. Inspect for any visible fibers. A post removal (lock-down) encapsulant shall then be spray applied to ceiling, walls, floors and other areas exposed in the removal area. The exposed area shall include but not be limited to plastic

barriers, furnishings and articles to be discarded as well as dirty change room, air locks for bag removal and decontamination chambers.

G. Site Inspection

1. While performing asbestos engineering control work, the Contractor shall be subject to on-site inspection by the AC. If the work is found to be in violation of this specification, the AC will issue a stop work order to be in effect immediately and until the violation is resolved. All related costs including standby time required to resolve the violation shall be at the Contractor's expense.

H. Final Clearance Inspection

1. The Contractor and AC will perform a complete visual inspection of the entire work area. Following final clearance air sampling, encapsulation, and air sample results below 0.01 fibers per cubic centimeter. If the final clearance inspection is not acceptable, the Contractor must remedy all deficiencies. *All related costs to perform final clearance samples per N.J.A.C 5-16 shall be at the Contractor's expense and standby time required to resolve any violation/deficiencies shall be at the Contractor's expense.*
1. The AC shall issue Certificate of Completion after final inspection. The Certificate of Completion shall be issued if:
 1. All information is complete;
 2. Final inspection is approved;
 3. Final air monitoring levels as required by NJAC 5:23-8.21 or lower has been attained; and
 4. All requirements of this specification and NJAC 5:23-8 have been met.

3.3 CLEAN-UP AND DISPOSAL

A. Housekeeping

1. Essential parts of asbestos dust control are housekeeping and clean-up procedures. Maintain surfaces of the asbestos control area free of accumulations of asbestos fibers. Give meticulous attention to restricting the spread of dust and debris; keep waste from being distributed over the general area. Use HEPA filtered vacuum cleaners. **DO NOT BLOW DOWN THE SPACE WITH COMPRESSED AIR.** When asbestos removal is complete, all asbestos waste is removed from the work-site, final clean-up is completed, and the final clearance inspection is acceptable, the AC will attest that the area is safe before the signs can be removed. The AC will visually inspect all surfaces within the work area

for residual material or accumulated dust or debris. The Contractor shall re-clean all areas showing dust or residual materials. If re-cleaning is required, air sample and establish an acceptable asbestos airborne concentration after re-cleaning. The AC must agree that the area is safe in writing before unrestricted entry will be permitted. The Authority shall have the option to perform monitoring to determine if the areas are safe before entry is permitted.

B. Title to Materials

1. All waste materials, except as specified otherwise, shall become the property of the Contractor and shall be disposed of as specified in applicable New Jersey and Federal regulations and herein.

C. Disposal of Asbestos

1. Procedure for Disposal

- a. Collect asbestos waste, asbestos contaminated water, scrap, debris, bags, containers, equipment, and asbestos contaminated clothing which may produce airborne concentrations of asbestos fibers and place in sealed fiber-proof, waterproof, non-returnable containers (e.g. double plastic bags 6-mils thick, cartons, drums or cans). Wastes within the containers must be adequately wet in accordance with 40 CFR 61-SUBPART M and NJAC 5:23-8 and NJAC 7:26. Affix a warning and Department of Transportation (DOT) label to each container including the bags or use at least 6-mils thick bags with the approved warnings and DOT labeling preprinted on the bag. The name of the waste generator and the location at which the waste was generated shall be clearly indicated on the outside of each container. Prevent contamination of the transport vehicle (especially if the transport vehicle is a rented truck likely to be used in the future for non-asbestos purposes). These precautions include lining the vehicle cargo area with 6-mil plastic sheeting (similar to work area enclosure) and thorough cleaning of the cargo area after transport and unloading of asbestos debris is complete. Dispose of waste asbestos material at an Environmental Protection Agency (EPA) or State-approved asbestos landfill off Authority property. For temporary storage, store sealed impermeable bags in asbestos waste drums or skids. The Authority or AC will assign an area for interim storage of asbestos waste-containing drums or skids. This area must be lined with 6-mil plastic sheeting and placed under negative pressure for the duration of the interim storage. Procedure for hauling and disposal shall comply with 40 CFR 61-SUBPART M, New Jersey and other applicable standards. Sealed plastic bags may be dumped from drums into the burial site unless the bags

have been broken or damaged. Damaged bags shall remain in the drum and the entire contaminated drum shall be buried. Uncontaminated drums may be recycled. Workers unloading the sealed drums shall wear appropriate respirators and personal protective equipment when handling asbestos materials at the disposal site.

2. Asbestos Disposal Quantity Report

- a. Direct the QP to record and report, to the AC, the amount of asbestos containing material removed and released for disposal. Deliver the report for the previous day at the beginning of each day shift with amounts of material removed during the previous day reported in linear meters or square meters (linear feet or square feet) as described initially in this specification and in cubic meters (feet) for the amount of asbestos containing material released for disposal. Allow the AC to inspect, record and report the amount of asbestos containing material removed and released for disposal on a daily basis.

END OF SECTION